

Success Story

Tuopu empowers E-mobility Industry with LiCON Machining Centers and Technologies

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Tuopu Group is a technology-leading automobile parts company committed to innovative manufacturing capability on power chassis systems, interior and exterior systems, and intelligent driving control. Founded in 1983, Tuopu has been committing to excellent quality and service. Thanks strategy and the strong foresight of E-mobility Industry, Tuopu grows rapidly with the main NEV OEMs in China, USA, and Europe, such as Geely, BYD, Li, NIO, Hiper, Rivian, Lucid, Volvo etc.

“To develop products like knuckle and subframe with our customers within a very short period, we decided to invest the reliable CNC machining centers and the latest technologies in advance. LiCON is obviously our first choice at this strategical moment.” explains Tuopu management team. Right after investigation and visiting reference customers, Tuopu placed orders of the first 10 machines to LiCON in 2018. After the successful run-off of knuckle production in big Shanghai area, the further 19 LiCON machines were purchased for diverse subframe lines in last three years. The following advantages of LiCON machines are so significant that they have been widely spread in Chinese E-Mobility Industry.

Complete Machining in only one clamping

LiCON is well known as one of the top German 5-axis machining center builders by Chinese customers. The complete machining of the complex chassis structural parts requires not only the machines but also the fixtures and process know-how, which are exactly LiCON's core competences. Back to year 2018, as a new player in lightweight chassis structural parts, Tuopu teams relied upon LiCON's expertise in this phase. For knuckles made of aluminum alloy, LiCON provided double spindle solution with pallet changer, which allowed the parallel loading/unloading while machining, and the complete machining of LH/RH parts on every single machine. All fixtures and toolings are well designed to fit one clamping concept.

For high pressure die casted subframes, LiCON provided single spindle solution with direct load, which offered an interference diameter of 1600 mm in A and B-axis. This design allowed to clamp the parts vertically on the bridge, which is tailor made into a narrow version.

This remarkable combination allowed six sides machining the complex subframe within one clamping. The digitally developed fixtures were designed and manufactured in LiCON Germany. They worked perfectly in terms of lightweight, stiffness, dynamic balancing, easy access, and the hidden fluid lines. “The whole package from one interface of LiCON is the most important decision of this project, which leads to our huge success of subframes for electrical vehicles. Based on what we learned from LiCON, now we can develop one clamping concept for the other structural components.” confirms Jun Zhao, Operation Director, R&D Power Chassis System.

Environmentally friendly technologies

“Our mission is to provide more secure, comfortable, and environmentally friendly technologies and products for cars. That is why we always look for green manufacturing technologies. LiCON is the perfect strategical partner for us when it comes to this topic.” says XinXin Li, GM Business Unit Subframe. All 29 machines are equipped with minimum quantity lubrication (MQL) system and LiCON ECO-mode, which are helping Tuopu to save energy consumption by approx. 40%. Unlike the conventional lubrication with emulsion, the dry metal chips by MQL can be recycled easily without any further cleaning and drying process. The filtration and disposal process of emulsion residue are saved as well. Furthermore, the workshops are kept very clean and dry despite 3 shifts x 7 days/week production, and therefore have become the show rooms in Tuopu. “Our EHS management team is particularly satisfied with LiCON technologies.” confirms XinXin Li.

Highest machining quality and performance in production

For more than 60 years, LiCON is well known for engineering development and manufacturing from Germany for the world. Tuopu believes in LiCON’s philosophy of “Made in Germany”. The machining quality as well as the process stability have been excellent right from the beginning. As more and more diverse CNC machines and automation lines have been running for chassis parts production in big Shanghai area, Tuopu finds that LiCON machines are the most outstanding among all international and domestic suppliers in terms of machining quality, Overall Equipment Effectiveness and Mean Time Between Interruption. Besides, the LiCON machines are very easy to handle both in manual mode and automation line. This is very important for Tuopu because the Tier 0.5 supplier has not only serial production but also small batch of trial machining, which requires operators to work manually on the machine. Based on the performance of LiCON Machine, Tuopu is able to increase production capacity by nearly 50%. “The LiCON machines can operate with greater precision

and reduce the amount of waste during the manufacturing process. This results in higher quality products, faster lead times and ultimately, higher profit. Even the price of LiCON machine is the highest among all suppliers, we are ready to pay for the top quality.” announced Tuopu management team on Key Suppliers Conference in August 2022.

Localized LiCON organisation in China

LiCON understands the importance of providing exceptional service to its Chinese customers. That's why they have established local organizations in Shanghai, Beijing and Changchun to provide quick and effective support to their customers.

For Tuopu, LiCON has established a local organization in Shanghai to cater to their needs. Their team of engineers are readily available to provide technical assistance, maintenance, and repair services for the LiCON machines. LiCON also offers training programs for Tuopu's employees to ensure they know how to operate the machines to their full potential. This enables Tuopu to maximize their productivity and get the most out of their investment in LiCON CNC machines.

“In addition to these services, LiCON also takes feedback from us seriously. They frequently communicate with us to understand our needs and feedback on the CNC machines.” says Kent Ke, Operation Director Business Unit Subframe.

This work ethics helps LiCON continue to innovate and improve products for better serving the customers worldwide. Overall, LiCON is committed to providing exceptional service to the customers, and Tuopu is a great example of how LiCON goes above and beyond to ensure customer satisfaction.

About Tuopu

Ningbo Tuopu Group Co., Ltd. is a technology and platform type auto parts company listed on the Shanghai Stock Exchange (stock code: 601689), mainly committed to the development and manufacturing of automotive chassis system, trim system, intelligent driving system and other fields.

Founded in 1983 and headquartered in Ningbo, China, Tuopu Group has been dedicated to the automotive industry for 40 years. The Group has two business groups of power chassis system and trim system, and an independent brand business unit for intelligent driving - USHONE. The group mainly produces NVH anti-vibration system, interior & exterior system, body lightweight, chassis system, smart cockpit components, thermal management system, air suspension system, intelligent driving system and other products.

With its leading R&D technology, manufacturing technology, quality management and global supply capabilities, Tuopu Group has established good cooperative relations with many domestic and foreign automakers, and has become global partners of Audi, BMW, Stellantis, GM, Geely, Ford, Mercedes-Benz, Volkswagen, HiPhi , LI, NIO, Xiaopeng, RIVIAN, LUCID and other automakers.

More information: www.tuopu.com

About LiCON

LiCON mt GmbH & Co. KG, a global system supplier of modular machining centers stands for high-precision machining in series production. Core products are horizontal machining centers, with single-spindle, twin-spindle and even four-spindles. Unique is the portfolio of loading options. LiCON offers all three options, direct loading, double trunnion and pallet changer. Most of its customers from the automotive and other industries, appreciate the technology expertise and select a turnkey solution including the machining process. LiCON is dedicated to keep the quality of the machine and the machining process under control. That is why LiCON develops, designs and builds fixtures, motor spindles and most of its machine components inhouse.

Additionally, system integration with customized adaptable automation concepts.

With 210 employees in Europe, US, and China, LiCON is perfectly sized to lead in technology and be a flexible partner to its customers worldwide.

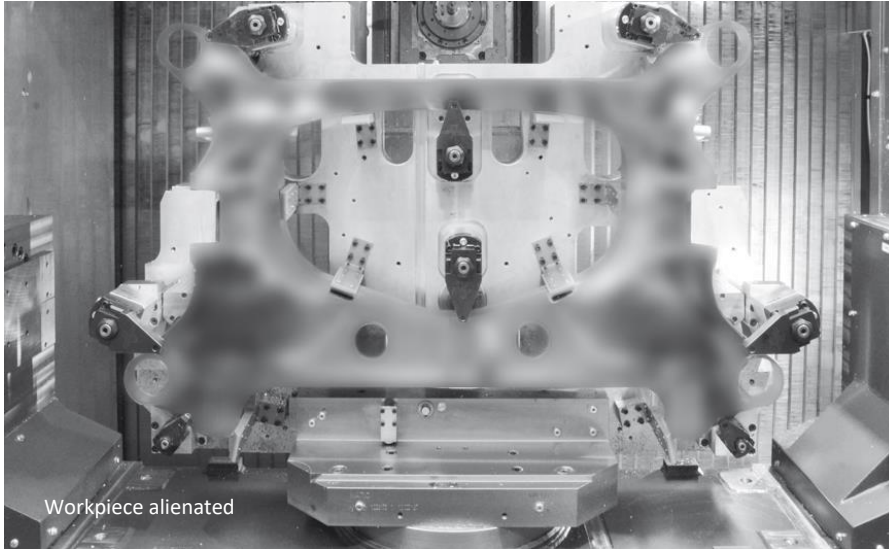
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Images



2023-07-17-Tuopu-1.jpg

LiCON machining centers in Tuopu workshop



2023-07-17-Tuopu-2.jpg
Subframe fixture



2023-07-17-Tuopu-3.jpg
Tuopu headquarter in Ningbo



2023-07-17-Tuopu-4.jpg
Subframe line with LiCON machining centers in Tuopu workshop



2023-07-17-Tuopu-5.jpg
One of the 29 LiFLEX I 12126 machining centres purchased from Tuopu.

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