

Specialist auto parts maker geared up for the future of mobility

Johoku's wheel and component technology is focused on supporting the future of mobility, both domestically and internationally.



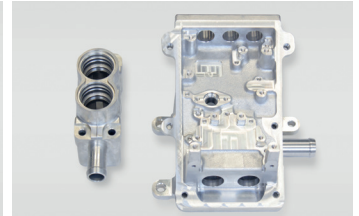
"We are eager to open our doors and export to companies all over the world."

Yoshihiro Kawakami,
President,
Johoku Industrial Co., Ltd.

Since its foundation in 1918, Johoku Industrial has been one of the most trusted manufacturing partners for Japan's motorcycle and wider automotive industry. Of the company's production volume, 70% is for motorcycles – its main products being cast wheels and spoke wheels among others – with the remaining 30% for automobiles, where an increasing proportion of this is focused on technologies considered the future of mobility, including parts for the fuel cell vehicle (FCV) and electric vehicle (EV) markets.



Current production of automotive parts (Turbo, FCV, EV)



"Our motorcycle production volume is three times smaller than it was 20 years ago," says Yoshihiro Kawakami, President of Johoku Industrial. "But our manufacturing costs have remained the same or less thanks to the strengths of our value production *kaizen* and manufacturing philosophy."

The company's core technology is machining that processes steel and aluminium, whilst its second focus of production is the painting for aluminium parts, with the final part of its manufacturing process being assembly. With its expertise in machining, Johoku was appointed as a supplier on one of the first FCV car projects. Instead of being powered by a combustion engine, FCVs are powered by fuel cell stacks, which generate electricity from a reaction between hydrogen and oxygen from the air. Not only do they offer a form of zero emission transport, as they only emit water, but FCVs are highly energy efficient, and the hydrogen used in them can be manufactured from natural energies such as solar and wind.

ny setting up a factory in Chennai, South India in 2014. "India is a huge market, particularly



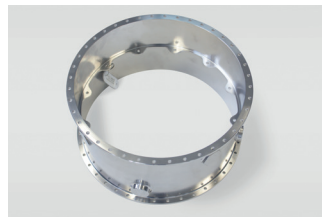
Head office

for motorcycles too, and we've recently established a contract for a technical assistance agreement for motorcycle wheels with a large company there."

Not content with cracking one of the world's biggest countries with its core technologies,

Johoku is also now setting its sights on the final frontier, space – or at least the aerospace sector – with its solutions.

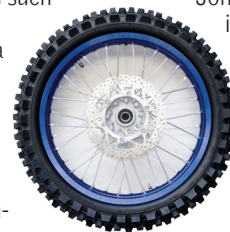
"Aerospace is a new frontier for us. There is a joint association called SOLAE, with 14 companies in Shizuoka Prefecture being members of the association. Recently, we took part in an aerospace exhibition in Tokyo," says Mr. Kawakami. "We are working together on how to assist the exciting developments in aircraft manufacturing."



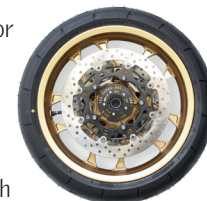
Trial parts for aircraft (Inconel), a future business

Industrial engineering is an area of speciality that is concerned with the optimization of complex processes by developing, improving and implementing integrated systems of people, knowledge, information and equipment. "We are still in the process of implementing *kaizen* [continuous business improvement] with our Theoretical Value Production," explains Mr. Kawakami.

"Our product is a critical part that supports the high-pressure hydrogen tanks for the FCV car on both ends," says Mr. Kawakami. The company is also involved in the manufacture of EVs through parts production for heat exchangers, which are key components for temperature reduction. "We already have manufactured these parts for EV cars; our direction is therefore towards EVs, in line with the worldwide movement," explains Mr. Kawakami.



Current production of assy unit (motorcycle cast wheel and spoke wheel unit)



To capitalize on this opportunity, Johoku's strategy is to target both Japanese and Indian car manufacturers, with the compa-

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