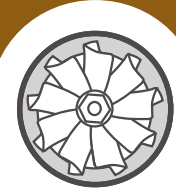


Leading Player

Interview with an Innovator



Ensuring reliability under extreme pressure: compressors

From oil and gas extraction through petrochemical production, compressors are key components in the world's energy infrastructure. Renowned for their advanced technology and matchless reliability, Mitsubishi Heavy Industries Compressors Corporation's (MCO) are the solution of choice for customers around the world. Now responsible for production of MCO compressor products, **Kazuhito Tojo** has a wealth of global experience. We interviewed him to learn about his work philosophy and his thoughts on global expansion.

What is a centrifugal compressor?



It's a device that uses an impeller to generate centrifugal force that compresses or pressurizes gasses, such as CO₂ and natural gas. It is widely used in applications such as petrochemical and natural gas processing, oil refining, fuel gas for electricity generation and pipelines.

▲ Centrifugal compressor/steam turbine

Superior reliability recognized worldwide

Q. How do customers use the compressors you make?

A. Our compressors are used around the world at oil refineries, LNG (liquefied natural gas) and fertilizer plants, and at power generating stations. At the heart of these facilities, they play a key role in supporting the world's energy infrastructure. Over the past few years, during the shale-gas boom, the number of orders we received jumped five-fold. For us, it was an important challenge to support the changing global demand for energy, and it reaffirmed the importance of our work.

Pick Up Innovator >>>

Profile

Kazuhito Tojo
Assistant General Manager
Mitsubishi Heavy Industries
Compressor International
Corp. (MCO-I)

After joining MHI in 1996, Tojo went straight into the Machinery Production Dept., where most of his career has involved factory testing of large-scale compressors. In 2000, he was given responsibility for all compressor business lines at MHI's Hiroshima Machinery Works. In 2013 he was given a fresh challenge: supervising the launch of a new plant in Texas. After the successful completion of that project he was promoted to his current position in October 2015.



Q. Is there anything special about MCO's compressors?

A. Yes, our products are known for their superior reliability. That's critical, because if a compressor goes down, then the entire plant has to shut down, which means a major loss for the customer. So we are very thorough in our efforts to improve reliability – and one key task is to do everything possible to limit rotor vibration. To that end, we leverage our entire knowledge base in precisely balancing the shape and material composition of the impeller – which is the core component. We pay close attention to the structure and dimensions of each part in order to realize stable rotation with minimal vibration. Our customers notice the difference this makes, and many tell us: "MCO's compressors are extremely quiet." Another factor behind our reputation for reliability is that our compressors can handle a wide range of conditions, flexibly handling changing loads with high efficiency.

"I always try to be an optimist"

Q. What's the most memorable project in your career so far?

A. Back in 2002, we had to factory test an extremely high-pressure compressor (20MPa) for gas injection [technology to inject high-pressure gas deep underground for recovery of oil/gas wells]. This required immense power, everything we could muster in the Hiroshima Machinery Works, to test run it for two and a half days. If something went wrong it would have been a huge problem, but thanks to our meticulous risk assessment from the planning stage, the test was successful. I've often been tasked with such difficult projects – challenges where we faced many unknown factors – but I always approach my job with a sense that, 'this is something only I can do.' I always try to be an optimist.

Q. Now that you have overall responsibility for production, what do you try to keep in mind?

A. I try to accurately assess the characteristics of my team members in order to assign the right person to the right task. Doing that requires good communication at all times, so I try to understand not only what's going on at work, but what's happening in people's private lives or family situation. That, plus I always try to make decisions from a neutral position, to remain calm at all times, to listen to other people's opinions and to collect information.

Evolving as a global manufacturer

In April 2015, MCO-I began operations at a new plant in Pearland, Texas, a suburb of Houston. A second production site for compressors and turbines in addition to the company's main Hiroshima Machinery Works, Pearland also functions as the hub for after-sales service in the U.S. Tojo supervised the start-up of the new plant.

Q. What did you learn by working on the new Texas plant?

A. I learned a lot about the cultural differences between Japan and the U.S. In Japan, we prepare plans in units of three months and one month, and further break down processes in detail using weekly schedules. We meet deadlines through the cooperation of everyone on the team, and we train our personnel by passing on learned craft techniques. In the U.S., by contrast, the focus is more on personal responsibility, and if it looks like a deadline might be missed, they respond by quickly adding staff.

I believe we can and should improve performance in both Japan and the U.S. by harnessing the best of both approaches, rather than simply forcing everyone to do things the Japanese way. The same goes for manufacturing technology. I'd like to find ways we can evolve as a global manufacturer by combining the technology we have amassed over many years in Hiroshima with what they have in the U.S.

Q. What are your priorities for the future?

A. As global energy demand is expected to continue growing, I expect customers in a hurry to build new plants are going to demand even faster delivery. Although our new Texas plant has only just started up, I believe we will have to build more production sites around the world. I want to develop a system to provide the same quality, price and quick delivery everywhere, and make maintenance and after-sales available immediately, for all customers, no matter where in the world they are. In this way, I hope we can aim to become a truly global company.

