

ULVAC's Benefactors Without this company, ULVAC might not have been able to become a general vacuum system manufacturer.



Mr. Tomotaro Tanabe, Fourth President of Toyo Seiki Co., Ltd.

Toyo Seiki Vacuum Research Corporation

Benefactors who opened the door for ULVAC to become a comprehensive manufacturer of vacuum equipment



Toyo Seiki's current Head Office (Amagasaki City, Hyogo Prefecture)



Former Toyo Seiki Head Office/Plant (Became ULVAC's Amagasaki Plant in 1956.)

As a comprehensive manufacturer of vacuum equipment, ULVAC, Inc. provides a wide range of products, including vacuum components and materials, vacuum pumps and gauges, and other equipment. However, ULVAC did not open the door to becoming a comprehensive manufacturer of vacuum equipment on its own. Rather, the door was opened by the merger with Toyo Seiki Vacuum Research Corporation in 1956.

Ltd., Shinko Seiki Co., Ltd., and Kyowa Vacuum Engineering Co., Ltd. Through industrial-academic collaboration, Toyo Seiki manufactured sealed rotary vacuum pumps, vacuum dryers, and vacuum distillation systems. Additionally, as a pioneer in vacuum technology, the company contributed to the pharmaceutical, oil, and chemical industries, among others. For example, Toyo Seiki manufactured penicillin and blood serum, and refined vitamin A from whale liver oil.

Then, in 1953, the company separated its vacuum division and established Toyo Seiki Vacuum Research Corporation.

Toyo Seiki is now a 110-year-old company that boasts high-level technologies and a long history in ultra high pressure air valves and non-ferrous metal precision die forging. Toyo Seiki's 80-year annals also mention the history of its merger with ULVAC: "In both name and substance, ULVAC is one of the world's leading manufacturers specializing in vacuum technology, and is well known internationally. Back in 1946, Dr. Ryotaro Mitsuda and President Tomotaro Tanabe sowed seeds by betting on the company's future, and the tree of their hope grew and blossomed and came to bear remarkable fruit."

Incidentally, the home/factory of Konosuke Matsushita, one ULVAC's investors, was located in Ohiraki, Fukushima Ward, Osaka where Toyo Seiki's Osaka Plant is located (it was Head Office at the time). It is said that Mr. Matsushita used to come regularly to the Head Office to borrow tools and jigs and hold technical consultations about pressing machines (starting around 1918).

● Toyo Seiki's 110-year history

Toyo Seiki Co., Ltd. began as Matsumoto File Limited Partnership Company after acquiring Matsumoto File Manufacturing in Fukuoka in 1908. Its Vacuum Division was established in 1946.

Immediately after the end of World War II, the company became aware of the urgent need to manufacture vacuum equipment, and invited Prof. Seishi Kikuchi of Osaka University, Japan's leading nuclear physicist at the time, to head a research laboratory. Around this time, despite the postwar turbulence, many vacuum system manufacturers were getting started one after another, including Tokyo Vacuum Co.,

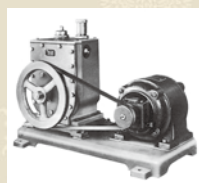
ULVAC's business operations around 1957

The merger with Toyo Seiki Vacuum Research Corporation expanded ULVAC's product portfolio as follows:

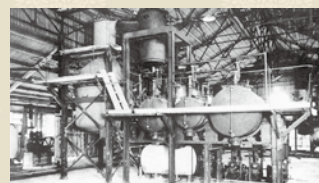
- Equipment for vacuum chemistry (various types of vacuum distillation systems)
- Equipment for vacuum metallurgy
 - Vacuum melting furnace
 - Vacuum sintering furnace
 - Vacuum annealing furnace
- Equipment for vacuum degassing casting
- Vacuum impregnation equipment
- Various types of exhausting equipment
- CRT continuous exhausting equipment
- Continuous exhausting and drying equipment for electric refrigerators
- Automatic exhausting platform for vacuum bottles
- Ultra-high vacuum exhausting equipment
- Vacuum evaporation equipment
- Vacuum molding machine
- Vacuum pumps and valves
- Vacuum gauges
- Various types of material for vacuum equipment

Imported:

- Products made by NRC (U.S.)
- Products made by Leibold (Germany)



Product made by Toyo Seiki
Rotary-type vacuum pump "R-1"
(Around 1948)



Product made by Toyo Seiki
High-vacuum distillation
equipment for plasticizers
(Around 1949)



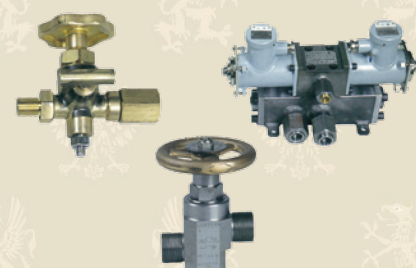
Product made by Toyo Seiki
Molecular distillation equipment
(Around 1948)



1,600-ton forging press



Large forged products made with a 1,600-ton press



High-pressure valves
(Stop valve for pressure gauge, stop valve for oil pressure, solenoid valve for oil pressure)

● **The merger with ULVAC was achieved thanks to a bold decision by Mr. Tanabe, President of Toyo Seiki**

The following historical account of the merger with Toyo Seiki has been excerpted from ULVAC's 50-Year annals, "A Life Dedicated to Vacuum III," published in 2002.

In November 1956, ULVAC merged with Toyo Seiki Vacuum Research Corporation (capitalized at 5 million yen), located in Amagasaki City, Hyogo Prefecture. This merger turned out to have a significant impact on the development of a nascent company (ULVAC) and Japan's vacuum industry.

For ULVAC, vacuum technology represented a promising business and we were convinced it would come to be seen as a cutting-edge technology essential to industries that were becoming more and more advanced. However, the reality was that Japanese companies were locked in price wars in an extremely small and limited market. That is, instead of competing based on technology, they were competing in a completely futile way that only drained each company's corporate strength. Our company's management staff had misgivings: "Even though the vacuum industry has a promising future, its current state is inhibiting development and there is no possibility for us to make a difference for industries in Japan."

Tomotaro Tanabe, President of Toyo Seiki Co., Ltd., who was managing Toyo Seiki Vacuum Research Corporation (founded in 1908) in Kansai, was one of

the people who felt these misgivings. Toyo Seiki Vacuum Research Corporation was established in 1953 by making independent the Vacuum Division established by Toyo Seiki in 1946. Prof. Seishi Kikuchi of Osaka University, who had been focusing on the development of the vacuum industry through academic-industrial collaboration with Toyo Seiki, also shared the misgivings.

Prof. Kikuchi had been a classmate of Ryokichi Sagane and Hiroo Kumagai, both technical advisors to the company, at Tokyo Imperial University. Negotiations over the merger between ULVAC and Toyo Seiki Vacuum Research Corporation concluded in April 1956 against this background, and the merged company formally started work that November.

Despite the fact that the new, merged company had started later than other companies in the industry, it was given the name Japan Vacuum Engineering Co., Ltd. (the company name at the time of ULVAC's founding). Its combined capital was 23 million yen, and all 46 employees of Toyo Seiki Vacuum Research Corporation were transferred to the new company. As a result, the total number of employees almost doubled, from 56 to 102.

The former Head Office of Toyo Seiki Vacuum Research Corporation in Amagasaki became our company's Amagasaki Plant (Plant Director: Seiki Kobayashi). In terms of operation, it took over the manufacture of vacuum freeze-drying equipment that our company had developed, as well as equipment for vacuum chemistry, vacuum valves, pumps, and so on. President Tomotaro Tanabe joined Japan Vacuum Engineering Co., Ltd. as a director, and Prof. Seishi Kikuchi decided to continue as technical advisor,

along with Eizaburo Nishibori, Ryokishi Sagane, and Hiroo Kumagai.

For FY1956, the new company reported sales revenues of 165 million yen. The merger did not expand our company in size only. The percentage of internally produced parts, i.e., the domestic production rate, increased to 93%. Backed by the new power created by combining the two companies' technologies, we began to establish a structure for taking on the major mission of "contributing to industries."

● **Inheriting corporate culture was important to ULVAC even after the merger**

In 1963, ULVAC's Yokohama (Idogaya) Head Office/Plant, which had been partially seized by the U.S. Military, was completely released, and the Amagasaki Plant was consolidated into the Yokohama Head Office/Plant.

Later, in 1988, Kyushu Vacuum Technology was established in the Kagoshima Industrial Park in Kyushu, and the pump-manufacturing expertise nurtured at the Amagasaki Plant was transferred there and has been inherited by present-day ULVAC KYUSHU. A plant that was a subcontractor of the Amagasaki Plant became the present-day Osaka CS Center of ULVAC TECHNO and continues to exist near Toyo Seiki to this day.

Although Toyo Seiki and ULVAC have been proceeding on separate paths, both companies continue to have confidence in their technologies and adhere to their founding philosophies. For ULVAC, which is aiming to become a 100-year-old company, it is important to continue cherishing this DNA.