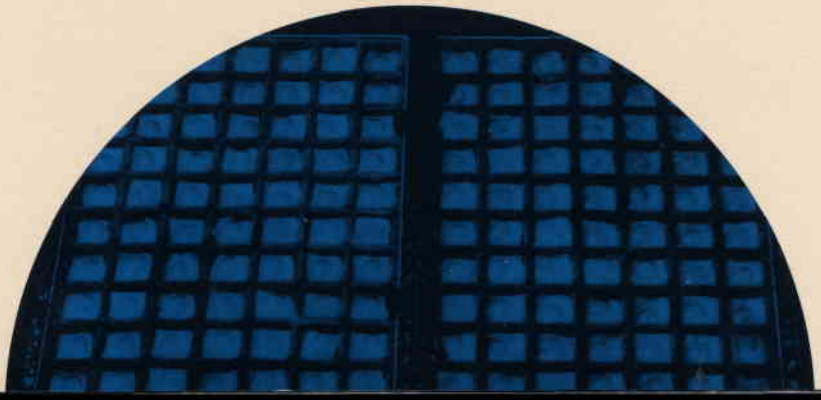
The Man Who Invented the Japanese Contact Lens

The Challenges of Kyoichi Tanaka

Menicon



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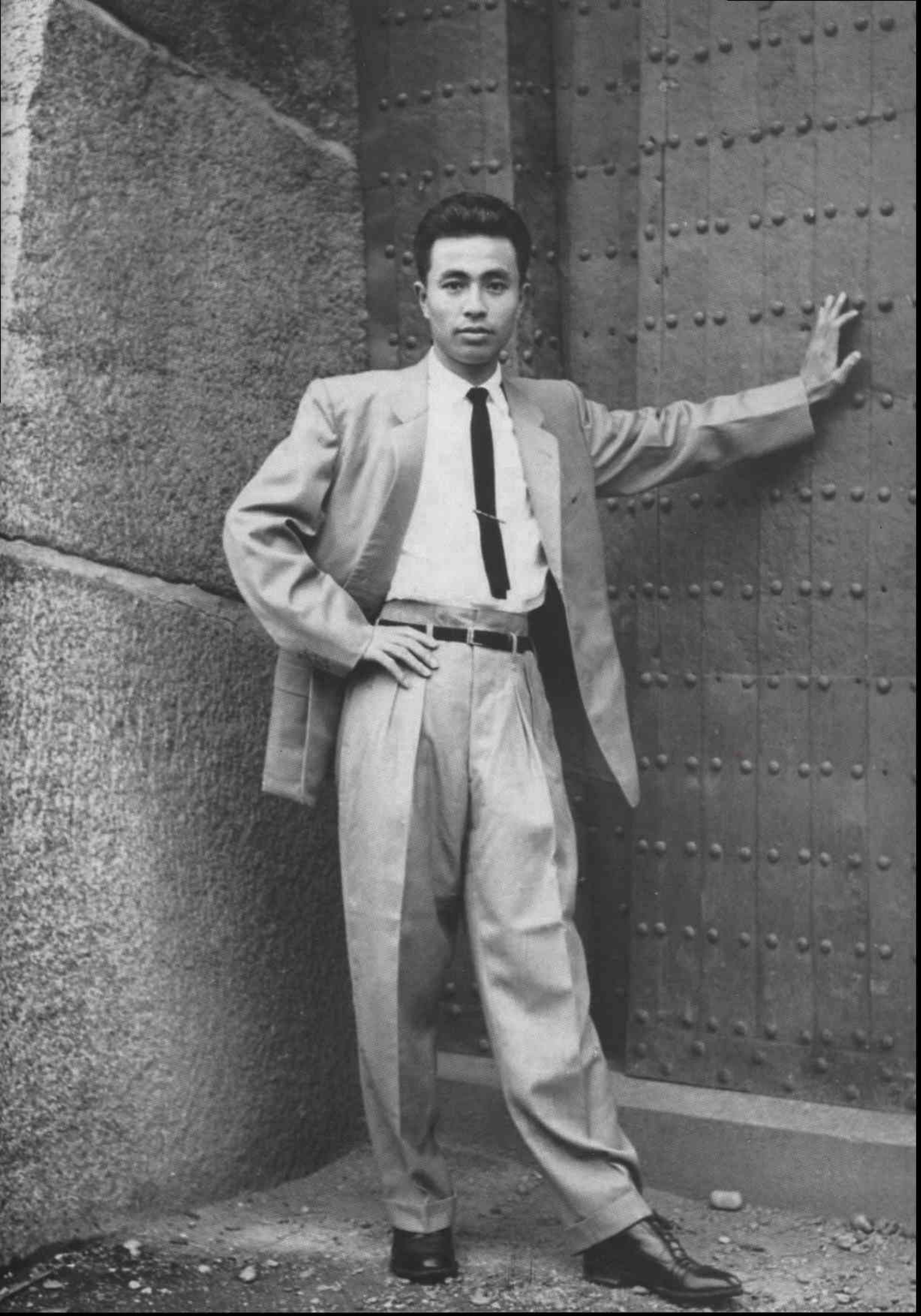
Right: A photograph of Kyoichi Tanaka at the gate of Nagoya Castle on October 22, 1955 (24 years old)



Chapter 1 Kyoichi Tanaka's Boyhood Years

A mischievous boy: the opposite of his namesake

"Kyo-chan was a real mischievous boy. I remember he was fighting with someone almost every day." Even now, everybody agrees at school reunions. That was Kyoichi Tanaka. The man everybody called "Kyo-chan" now devotes himself to contact lenses and serves as the Chairman and representative director of Menicon. He was born on July 8, 1931, in Kisogawa-cho, Haguri-gun, Aichi prefecture, as the second son of a bamboo sculptor, Kazan Tanaka (real name: Yoshinao) and his wife, Haru. Kazan named the baby Kyoichi, hoping that he would become a decent and worthy man, but Kyoichi grew up as a mischievous and hyperactive child.

After Kyoichi entered Kuroda Jinjo Elementary School, he never did his homework and was always ready for a fight, perhaps because he was raised with great freedom. His teacher thought of him as a problem child. Also, he was the biggest boy among his classmates. During his cheerful elementary school days he was praised by his teacher only once. However, it was for something related to fighting, proving how rambunctious he was.

When Kyoichi was in the third grade at his elementary school, the Pacific War broke out after the attack on Pearl Harbor. Japan won the battle, but from the greater point of view, the country was heading down the path to destruction. In June, soon after Kyoichi entered junior high school, he was drafted as a student and sent to one of three military plants in the neighborhood. Shortly before that, his older brother, Toyoyasu, was also drafted and sent to Mitsubishi Kogyo Hatsudo Seisakusyo in Ozone, Higashi-ku, Nagoya City as a residential staff member. The plant Kyoichi was sent to was just 400-500 meters away from home, and it made propellers for special submarines.

At first, he was delighted because he thought he did not have to study any more. However, he found out later that the plant manufactured propellers for suicide bombers. Still now, his heart is filled with deep sorrow and pain when thinking about the young suicide corps who died holding the bombs.

Since he was known as ringleader among the children, he gained the

Kyoichi's birthplace (as of October 23, 1954)

A photograph from junior high school graduation (February 16, 1946; 14 years old)

>> Proverbs and quotes by Kyoichi Tanaka—Part1

Love all, without a temper, and think correctly.

1966

Having a loving heart towards all and to all things without losing your temper, always think correctly.

Be able to make judgments in an instant.

1966

There are opportunities right in front of us; however, we often miss them. Keep your eyes open to be able to recognize an opportunity and immediately seize it should it appear.

High speed action

1967

We must never ignore the importance of speed, especially in business management operations. Company members at all levels should constantly think about how to improve the speed and efficiency of the company as a whole.

favor of the plant manager and his superiors. He was assigned to serve as a group leader and became a "leader" for the first time in his life.

Kyoichi was an assistant to an engineer, Rokuro Sekiya, who was from Nagoya. Kyoichi ran errands for him. Sekiya was a top-class engineer specializing in lathe processing technology in the plant at the age of just 21 or 22 years old, and Kyoichi learned about how to handle the lathe and smithy machines by watching Sekiya's work. Since he was good with his hands and had always seen his father work, he learned how to use them quickly. This experience was a poignant step in his eventual development of the contact lens.

Chapter 2 **New Beginnings**

Working at an eyeglass shop

The war ended on August 15, 1945. Kyoichi had worked at the plant for a year and a half during his two years of junior high school. He had earned 150 yen, which was a fortune for that time. With the war's end, his small fortune in hand, he found himself able to feel like a child again. Looking around him, his home had not been burnt down; however, the Kisogawa-cho neighborhood had been destroyed in air raids. When he looked at the scene around him, Kyoichi realized how close he had come to being killed.

That same year, his older brother, Toyoyasu, began to help his father with the family business, but Kyoichi was left without work. Due to the turmoil that existed following the war, there was little hope for Kyoichi to find work after graduation. He even toyed with the thought of working at the plant he had been at during the war. He found himself whittling away the hours without any specific goals.

By the spring of 1946, Kyoichi was languishing without studying much at all. In any event, he had been able to graduate from junior high school. He was idling away his summer without much hope of finding work, until one day he was taken to the house of the company president of Tamamizuya in Sakae-machi, Nagoya City, by his father. The president's first words were, "So, you are Kyoichi, eh? How about coming to work for me from tomorrow?" Kyoichi was very surprised. He didn't know that his father and the president had come to an agreement over Kyoichi's employment.

At Tamamizuya (left: Kyoichi Tanaka)

Designing eyeglasses with his skillful hands

Tamamizuya was a company rich in history. Established in 1751, it had been a famous handbag store, but it was turned into a store specializing in eyeglasses a few years before Kyoichi came. During the war, all the salesclerks had been drafted to fight, so the store was open, but not doing very much business. At that time, the president and his wife had just started to rebuild the store with the general manager Sada Fukuda, who had just been discharged from military service. Other than that, there was a 25-year-old saleswoman, as well as the present. So the store was infused

with energy when Kyoichi joined. A man named Terano, who was the president's relative, also joined the store on the same day as Kyoichi did.

Under these circumstances, Kyoichi learned general manager Fukuda's business techniques like a sponge soaks up water. Soon after that, Fukuda decided to leave his job and return to his hometown in the Kyushu. Kyoichi was assigned to serve as the chief engineer. Three years later, he was better than anyone else when it came to eyeglasses. People applauded, saying, "Kyoichi Tanaka is indispensable at Tamamizuya." His name became well known in the industry.

Since Tamamizuya was the oldest and longest-running business in Nagoya, many wealthy—and therefore very demanding—customers patronized the store. Kyoichi devoted himself to the design of eyeglass frames that were fitted to the shape of each customer's face while making the most of his creativity, which he had inherited from his father. His work was well-received by his customers. During that time, most people were wearing round eyeglasses, called the Lloyd type eyeglasses, named after Harold Lloyd, a popular comic actor in the 1920's and 1930's. Thus, Kyoichi's unique customized eyeglasses became extremely popular among not only his customers but also those involved in the industry. He found real joy in designing unique eyeglasses. It was in these early years that Kyoichi learned the reward of taking on new challenges. In those days the average price of eyeglasses was 500 yen to 600 yen per pair. The ones designed by Kyoichi ranged from 3,000 yen to 8,000 yen. Even with such a price difference, his eyeglasses sold very well and contributed to the sales of Tamamizuya.

Obtaining a special license as an optician at the U.S. Fifth Air Force Hospital

1950 was a great turning point for Japan. It had been five years since Kyoichi joined the store, and that year would also be a real turning point in his life.

On June 25th, the Korean War started, and it continued for three years. Japan's status as a defeated and occupied nation began to change. It now became an important as a U.S. base of operations. However, Japanese industry, which had suffered a great recession due to postwar disorder, experienced a special procurement boom. Industries in Nagoya, especially those focusing in textiles and metals, enjoyed a tremendous boom in business.

At that time, U.S. soldiers injured in the Korean War were taken to the Fifth Air Force Hospital near Nagoya Castle (currently the Tokai Post Office). The director of the hospital who happened to be an optometrist was having trouble procuring eyeglasses for his injured soldiers. At that time, eyeglasses and parts were not being imported into Japan. Only local Japanese eyeglasses were available. They would not fit Americans who had more prominent noses and broader faces.

"Find someone who makes good eyeglasses," the director instructed one of his subordinates.

In response to this, a military medic with his interpreter went through numerous eyeglass stores located in the city with a fine-tooth comb, and finally found Kyoichi at Tamamizuya.

One day, the military medic with his interpreter came to Kyoichi and said, "Mr. Tanaka, we need eyeglasses

A customer who belonged to the American military

for American soldiers. We have a problem because the Japanese eyeglasses don't fit Americans very well. Could you visit our hospital and meet our director?" He headed to the Fifth Air Force Hospital by jeep along Tamamizuya's president Syozaburo Tsuda. Kyoichi examined various American eyeglasses on the spot.

He already possessed enough knowledge of U.S. prescription eyeglasses because he had worked with American soldiers and their family members in Japan. So he was able to give immediate answers to the questions made to him through an interpreter.

"You are wonderful. From now on, we would like to put you in charge of making the eyeglasses for our hospital."

He received a special license as the hospital optician, and his life began to take on an international flavor. He went to the hospital every day to see injured soldiers who could not visit Tamamizuya. In the beginning, an interpreter helped him, but after a while, he had to handle his job without an interpreter. He worked very hard while communicating with his limited English and gestures. Not only did customers and their family members who received prescriptions from the hospital come, but Americans residing in Nagoya also began to arrive at the store. There were some American soldiers who bought 10 to 20 pairs of eyeglasses that Kyoichi designed, and then went back to a battlefield and sold them to their fellow soldiers. Kyoichi's eyeglasses were stylish and fit the Americans' faces very well. Thanks to this special license as an optician at the Fifth Air Force Hospital, sales at Tamamizuya steadily grew even further.

Chapter 3 **Taking on a New and Unknown World**

The concept of the contact lens

One day in 1950, the wife of a commander in the Allied Occupation Forces came to Tamamizuya to get her eyeglasses adjusted. The woman had come to the store several times. It was at that moment she spoke the words which were to change Kyoichi's life forever.

"I have a pair of contact lenses."

Contact lenses…since entering the eyeglass field, Kyoichi had been aware of work being done in America and Europe on contact lenses. It was almost unthinkable to be able to see such lenses here in Japan! A person who had actual contact lenses was standing right in front of him. Naturally, Kyoichi wanted to see them at all costs. He asked her, "If you have them with you, could you kindly show them to me?"

She replied "Oh no! They are very expensive, and it would be terrible should they broken." Wrapping her arms around her handbag she did not let him see them, no matter how hard he pleaded.

At that moment, he thought to himself, "Since, I have no choice. I will make them on my own."

Kyoichi was the type who hated to lose at anything. Not being able to see the lenses, he became incensed and determined to make them by himself any way he could. It is ironic—had the woman showed him her contact lenses without hesitation, he might not be the person he is today. He would have likely ended up being a shopkeeper of a small eyeglass store somewhere.

Encounter with the commander's wife

Inventing the contact lenses from scratch

From that day on, Kyoichi became absorbed with creating the contact lens that he had never seen.

From his work with eyeglasses, he possessed a basic knowledge of lenses and optics; however, he had almost no medical knowledge or the necessary tools.

He started by first observing his eyes in front of the mirror. As soon as he got home after work, he sat in front of his mother's tripartite mirror and accurately drew a detailed sketch of an eyeball while looking straight into it, from the right and from the left sides. Sometimes, he peered into the eyes of his brother, Toyoyasu, for additional research. From an outside observer's perspective, Kyoichi would have surely seemed insane. He managed to complete drawings for a prototype contact lens based on these early drawings.

Next, he had to find a suitable lens material. He focused on airplane windshields, the material of which (commonly known as "PMMA") was often used for the frames of eyeglasses. He obtained some left over PMMA from an eyeglass craftsman.

Now with drawings and material in hand, he needed to obtain the machining tools to actually make the lens. From that day on, after work, he started to look for small lathes, grinders, and other tools by visiting the shantytowns in Osu, Kanayama, and Kamimaezu. These areas had been bombed and burnt during the war. They were the only places to look for machinery and hardware in the aftermath of the conflict. It was hard to find lathes to make such small lenses, but after looking for a long time, he finally found a suitable lathe and polisher. They were in extremely bad shape, having been burned and become quite rusted. He cleaned off the rust, and polished the machine with oil so that it could become useable. He ended up using this machine for a long time.

He went to lens factories to find materials for polishing lenses. Not only did they give him lens polish, but they also introduced sales outlets to him. Thanks largely to his position as Tamamizuya's top salesman, many people helped him to complete his project.

Kyoichi's inventing notes

Making a contact lens

It was February of 1951. It had been three months since Kyoichi had heard about contact lenses from the American commander's wife. He finally had made

>> Proverbs and quotes by Kyoichi Tanaka—Part2

Advance with a broad view

1968

Have a broad perspective and constantly move forward. Don't remain in the same place. Continue to advance like a gear and always try to think fast.

Take the initiative

1968

Take control of your own work. If you work for the manufacturing department, take initiative and freely use the machinery— do not be used by the machines. If you work for the sales department, utilize your knowledge of the products and your psychological skills to satisfy the customer mentally with your products, and take the initiative with good sense.

Remember the kindness of people

1970

I am grateful that our company marked its 13th anniversary and truly appreciate our customers and employees who have been supporting the company. I would like to make the utmost effort while remembering the kindness of people.

what appeared to be a contact lens.

"I finally did it. This should work well."

However, he had made only the lenses. No one had worn them yet. Although he was confident about his lenses, clinical testing needed to be conducted. He had no choice but to use his own eyes to test his new creation.

"Kyoichi, please don't do it. It is dangerous. What if you lose your eyesight?"

People around him, including his father and mother, opposed his risky plan.

"I have two eyes, so there shouldn't be a problem." Kyoichi replied, "Even if one became blind in one eye, I still will be able to function with the other." His family's concerns eventually gave way to Kyoichi's strong determination.

However, it was not that he was not at all scared. "It'll be all right. I made these lenses. There will be a good outcome," he kept telling himself, as if casting a spell for a few days before he put the contact lenses in his eyes. He was performing a type of self hypnosis on himself.

He finally put a lens in his eye.

It did not hurt. Well, it wasn't as if there wasn't any discomfort, but it certainly wasn't unbearable pain. After that, he repeatedly used his eyes as guinea pigs and improved the quality and design of his lenses.

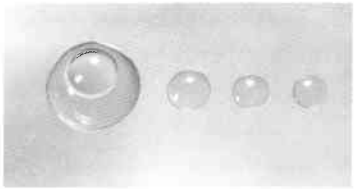
The contact lens situation in those years

Let's provide some information about contact lens situation in Japan at that time.

After the famous Leonardo da Vinci had experimented with contact lenses derived from basic theory in 1508 (during the Muromachi Period in Japan), many researchers continued to study them in Europe. In 1892 and 1911, Carl Zeiss, a prestigious lens company in Germany, which became interested in the potential of contact lenses, manufactured scleral lenses in cooperation with researchers in different countries. Then, the company manufactured corneal lenses made of glass in 1912 and used them to determine refractive error. After that, plastic was invented in Germany and the U.S around 1934, and low-risk lens manufacture that used plastic instead of glass began to be studied. The larger scleral lenses gradually developed into corneal lenses.

In medieval Japan, Kagekiyo, known as Akushichirobe, who was the third son of the brave Heike commander Kazusanosuke Tadaharu, tried to kill Yoritomo Minamoto at a memorial service for the Great Buddha of Todai Temple in Nara in March of 1195. This latter man had held the reins of government after defeating the Heike. However, the plan was unsuccessful. Kagekiyo was captured and sent to Kamakura. There is a legend that Kagekiyo put fish scales on his eyes to pose as a blind person. It is also said that it was Kazusagorobe who wore fish scales in his eyes, rather than Kagekiyo. In either case, it seems that at least one of them put fish scales directly on his eyeballs, forming a thin layer, in order to pose as a blind person while he could still faintly see. It is said that fish scales were widely utilized by ninja and spies to observe the movements of their enemies. This idea is similar to the concept behind current contact lens, and in a way, it is the origin of contact lenses in Japan.

Contact lenses were brought to Japan in 1913. Dr. Shinobu Ishihara introduced glass scleral lenses made by Carl Zeiss in Germany. In 1934, Dr. Tsutomu Sato made a glass scleral lens in Japan, but it was not put to practical use. Before the Second



Scleral lens (left), corneal lens (right)

World War, Dr. Minoru Nakajima, a professor of ophthalmology at the Nagoya University Hospital, ordered glass scleral lenses from Carl Zeiss, used his own eyes to test them, and admitted the superior quality of these lenses.

The first Japanese contact lens, from Kyoichi's hands

In 1949, Ginichi Okada who, at that time, worked for the eyeglass section of the Nakamura Department Store and researched artificial eyes, took a hint from contact lenses. He borrowed scleral lenses, with which PhD. Minoru Nakajima had experimented, and stored them at Nagoya University Hospital. He started research with Isamu Hoshino, who was the head of the ophthalmology department at the Japan Red Cross Hospital, and he served as an advisor. After that, Dr. Yutaka Mizutani at the ophthalmology department of Nagoya University Hospital started research and made a plastic scleral lens jointly with Ginichi Okada in 1950. The lens was used in an animal study.

Professional researchers were able to obtain information about contact lenses. However, it was difficult for a salesclerk like Kyoichi at an eyeglass store in a small town to obtain such information, and it was impossible to obtain real contact lenses.

Under these circumstances, Japan's first small corneal lenses of 11 mm to 11.5 mm in diameter were created by Kyoichi, based on his unique ideas. Kyoichi learned of Dr. Mizutani's study in a newspaper and visited him with the contact lenses he had created at the end of 1951.

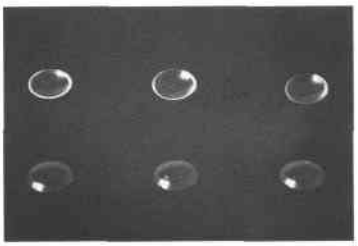
"I have been researching contact lenses as well," he said as he showed him his lenses.

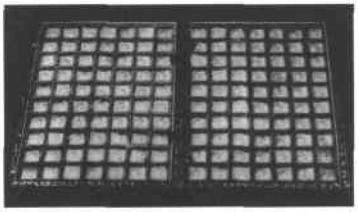
Dr. Mizutani was shocked when looking at the lenses that Kyoichi had brought. This was because he thought that it would have been impossible for Kyoichi, who was a young salesclerk of an eyeglass store and neither a scholar nor a doctor, to research contact lenses.

"Well, this is interesting. These can be used as test lenses for measuring the corneal curvature radius. I propose that we work together from now on," said Dr. Mizutani.

Following the encounter, Kyoichi heard that an American optometrist had contact lenses and asked him to show them to him. The lenses were very similar to the ones Kyoichi had created. The optometrist gave him a document regarding German contact lenses. After reading it, Kyoichi felt certain that his research had been on the right track.

The test lenses that Kyoichi delivered to Dr. Mizutani were put





The first corneal lenses developed and manufactured in Japan

>> Proverbs and quotes by Kyoichi Tanaka – Part3

Go back to the starting point

1977

A goal for this year is to "go back to the starting point." I would like each of you to write your own goals down on a blank paper and make the utmost effort to accomplish them.

Envision a dream

1978

Have a dream, envision it, and taste it. That is the key to success. Envision a successful future and continue to chase it.

A broad outlook and 360-degree thinking

1980

We are in a systems-thinking era. We should consider things from all different aspects, and then achieve goals at all costs.

on patients' eyes, and patients were pleased with their performance.

"Doctor, I can see very clearly with these lenses. They don't fall out even when I look down and they don't hurt. I'll take these."

At first, Dr. Mizutani could not accept that the corneal lenses Kyoichi had developed were contact lenses. However, after hearing evaluations from several patients who wore the lenses, he accepted them as contact lenses. He and Kyoichi devoted themselves to joint research more than ever. As patients reported excellent lens performance and comfort while they wore them, manufacturing could not keep up with the increasing number of orders for the lenses that Kyoichi created. Since Kyoichi was assigned a position of great responsibility at Tamamizuya, he worked on contact the lenses from nine or ten o'clock every night after work. He made lenses from dusk until dawn and finally became ill.

"Tanaka, are you all right? You don't look very well."

When looking at Kyoichi's pale face, the president of Tamamizuya was worried about him. He recommended that he receive a checkup at the hospital. At the hospital, after taking an X-ray, it was found that there was a shadow in Kyoichi's lung. He was suffering from tuberculosis, which was considered an incurable and greatly feared disease at the time. The president of Tamamizuya was worried about him and gave him one month's leave in order to hopefully recover.

However, Kyoichi, being absorbed with contact lenses, could not stop working with them. He foresaw that eyeglasses would be replaced by contact lenses. While on leave, he decided to leave Tamamizuya, where he had worked for seven years, and start his own company.

A polishing machine at the Nippon Contact Lens Research Institute (located in Kisogawa-cho, established in 1952)

Establishing the Nippon Contact Lens Research Institute

Toyoyasu, Kyoichi's brother, had helped their father with his bamboo sculpture business. However, he became interested in contact lenses as he watched Kyoichi's enthusiasm and began to help him with his research. They established the Nippon Contact Lens Research Institute in cooperation with Dr. Mizutani just before Kyoichi's 21st birthday in July 1952. They remodeled a room in their house in Kisogawa-cho into a laboratory and started to manufacture and sell contact lenses on a comprehensive scale for the first time in Japan. The history of the contact lens in Japan began at this point.

During that year, Dr. Mizutani presented contact lenses created by Kyoichi at a conference, and the lenses were well received. At that time, an innovative operation for correcting myopia was presented by Dr. Tsutomu Sato from Juntendo University. This was the origin of the radial keratotomy, or RK. The procedure was the focus of international attention. Dr. Sato visited Nagoya to attend a meeting for doctors and other person involved at the Asahi shrine in Naka-ku. On this occasion, Dr. Mizutani made a case presentation of a young man who wore corneoscleral lenses that Mizutani produced on his own, rather than the corneal lenses that Kyoichi created, and Dr. Sato showed a strong interested in them. After that, Dr. Mizutani started to research corneoscleral lenses jointly with Dr. Hisao Magatani and Hironobu Atsuzawa (this effort later resulted in the Tokyo Contact Lens Research Center, which became Seed Contact Lens).

However, fortunately or not, this led an intense discussion over the corneal lenses developed in the West

NK Wesley, OD lecturing at the Contact Lens Research Institute (Kyoichi Tanaka participating in a question and answer session in May 1957 when he was 25 years old.)

and corneoscleral lenses developed in the East every time ophthalmologic conferences were held. Eventually, they concluded an agreement under which Kyoichi's Nippon Contact Lens Research Institute, formerly called the Japan Contact Lens Laboratory, was to develop corneal lenses and the Tokyo Contact Lens Research Center was to develop corneoscleral lenses. In this way, they would not invade each other's territory.

During this period, the Japan Contact Lens Society, which was formerly called the Contact Lens Research Institute, was born. Intensive development of and research into contact lenses was implemented at each facility, and the industry began developing rapidly.

The contact lenses Kyoichi created attracted great attention across the nation. People involved in the industry considered Kyoichi's contact lenses innovative and replaced their eyeglasses. Since the average starting salary for high school graduates was 4,600 yen in 1952, a pair of contact lenses, which cost 8,000 yen, was very expensive. However, this price stayed unchanged for eight years. The price was about the same as a man's three-piece suit.

Kyoichi developed contact lenses after his encounter with an American commander's wife at Tamamizuya. Their sales increased rapidly. Since Kyoichi and Toyoyasu could not handle all this work on their own anymore, they asked the fourth brother, Seiichi, who worked for a textile company in Nagoya, and the first sister, Naoko, to help them, and the small laboratory became lively.

Deciding to devote his life to contact lenses

Kyoichi used airplane PMMA as a material for his contact lenses, but since PMMA contained many impurities, Kyoichi was thinking that it might be inadequate for sensitive eyes. He was seeking the safest material for the human body.

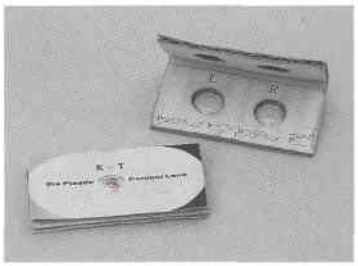
Since plastic attracted great attention as a new material, he placed an order for plastic with a plastic company in Osaka. He used it, but it was not an improvement.

"This isn't going to work. There must be something better." While using his network of personal connections, he ran around the country searching for a new material. However he was unable to find an adequate material.

"If I can't find it, I have no choice but to make it by myself." He decided to develop a plastic suitable for contact lenses even though he had no related academic knowledge.

He thought that it was essential to use a material suitable for contact lenses. He started to study materials while visiting people specializing in plastic. There was a plastic manufacturer called Rehm Chemistry in Shirakabe-cho, Higashi-ku, Nagoya. The late Hideo Hisano, the president of the company gave Kyoichi a variety of useful information about plastic.

At the time, the economy slowed and many companies went bankrupt. There was a prolonged recession and there were no more jobs despite the desperate wishes of the public. A company for which his fifth brother, Yotaro, had worked went bankrupt due to these severe economic conditions. Therefore, Kyoichi asked president Hisano to hire Yotaro at Rehm Chemistry and Hisano accepted the offer. Hisano was very kind and willing to help Kyoichi without expecting anything in return. He similarly asked a company called Nikko Denki to hire Kyoichi's other brother, Yuuki (the sixth son). Later, Yotaro and Yuuki established



The KT lens, which was named after Kyoichi Tanaka

Meiko Resin Company, and UM Co., Ltd, respectively. Due to matters related to the company president's health, Rehm Chemistry became a subsidiary of Tomey Sangyo Corporation, which Eishun (the third son) later established.

Kyoichi continued his struggle to find a safe material suitable for contact lenses.

Plastics used for dental treatments attracted his attention. They were created by mixing powders and liquids and boiling this mixture. However, after he studied such materials; he judged them unfit for contact lenses. Even though he managed to manufacture reasonable plastics after placing them in a mold, they contained many impurities.

Tokyo Contact Lenses manufactured lenses made from this molded dental material.

"How can I create safe plastic suitable for contact lenses?"

Studying materials through trial and error, he finally hit upon the idea that high-purity polymethylmethacrylate (PMMA) could be produced after he extracted a distillate from the ester used in the dental material.

He bought laboratory test tubes, flasks, distillation columns, and other tools at Chuo Rikaki Seisakusyo in Tsurumai, Naka-ku, Nagoya City. He heated the ester to extract the distillate and did so repeatedly. He repeated the process and extracted a high-purity ester.

He also devised a molding method to harden the ester. He extracted about 500 cc of distillate in a flask over a period of a day. Adding a polymerization accelerator made the distillate become a thick jelly-like substance (prepolymer). A jelly-like substance—It sounds easy, but he had almost no idea about how much polymerization accelerator to put in order to make an optimal prepolymer. Thus, he conducted the same experiment over and over.

He finally produced the safe high-purity PMMA that he wanted. However, it was a very dangerous material because it generated high temperatures when the polymerization accelerator was added. If it was left on the shelf or in another place, it would explode instantly. Refrigerators were a product that people could not easily own at that time. This material exploded frequently, and the family was troubled by its unpleasant smell.

Presentation at the Contact Lens Research Institute held at the Gifu public hall (May 1957; 25 years old)

A processing machine from that time (developed in 1961)

Developing machines to create high quality contact lenses by hand

Kyoichi had successfully developed a safe material for contact lenses. Next, he started to develop various machines with his brother, Toyoyasu, in order to commercialize (that is to say, mass-produce) contact lenses. Since Toyoyasu had worked at the Mitsubishi Kogyo Hatsudo Seisakusyo, he demonstrated his ability to develop machines. At first, they started to develop a polisher and asked an iron factory in the neighborhood to manufacture it. Since many factories had been struggling in the recession following the war, they were glad to work with the brothers. They sat in front of drawings prepared based on Kyoichi's ideas and Toyoyasu's technical knowledge and exchanged ideas while discussing them thoroughly. Finally, they developed a machine that could polish 10 to 20 contact lenses at once.

Kyoichi conducted a quality test by putting all finished these lenses on his eyes. Even if a lens looked fine, it is possible that hidden problems might be found after wearing them.

For example, if the edge of lens is not perfectly polished, it will lead to discomfort. There was no machine to test this, so Kyoichi's eyes were playing the role of such a machine.

By going to the Kiso River about three kilometers from this home by bicycle at full speed, he checked the extent to which the pressure of the wind might impact the contact lenses and the degree to which tears would become dry. Also, by leaving contact lenses on while he was swimming, he also checked what would happen when he opened his eyes in the water. In addition, he investigated the extent to which water pressure from diving into the water might affect the lenses. He conducted various experiments by himself, and used the findings to study and develop better contact lenses.

After that, a variety of machines, including a low-power measurer, molding machine, and polisher based on Kyoichi's ideas were made in succession. Since these machines took up a great deal of space, there was no room left in the small laboratory. Everything from materials and processing machines to products were produced based on Kyoichi's unique ideas. Currently, Menicon still develops everything "from materials to products" with its unique research and development approach. This system was born when Kyoichi prepared the required tools all by himself.

Kyoichi at the Kiso River (July 8, 1956; 25 years old)

Competition in the corneal contact lens market

Just after Kyoichi created Japan's first corneal lens, the Contact Lens Research Institute (later Japan Contact Lens Society) was established by famous ophthalmologists, including Dr. Noboru Kunitomo, Dr. Tsutomu Sato, Dr. Mutsuo Kajiura, Dr. Yutaka Mizutani, and Dr. Hisao Magatani, in 1951. Mass media was increasingly covering contact lenses and they become a popular topic of conversation.

In 1957, Dr. Wesley from Wesley Jessen Inc., who is a second-generation Japanese-American and was known as the foremost expert of contact lens in the U.S., was invited to Japan by Juntendo University. The contact lens that he brought was small, about 9 mm in a diameter, and similar to the one created by Kyoichi.

Tokyo Contact Lens Laboratory saw Wesley's contact lens and entered the corneal contact lens field after obtaining a license for manufacturing such lenses in Japan from Dr. Wesley. The corneal contact lens market, which Kyoichi had dominated for three years, turned in to a competitive market.

The world was changing rapidly after emerging from the postwar turmoil in just ten years. the Nippon Contact Lens Research Institute, which Kyoichi had established, grew rapidly, and his laboratory became too small to run its operations. Kyoichi went to Nagoya City two or three times in a week to sell his product. Every time he saw new buildings that had recently been built, here and there from the train window, he thought, "I wish one of the buildings was my factory." He was confident that if he provided contact lenses of the highest quality he could achieve his next goal, to build a new factory in Nagoya City. "I want a factory that has a floor space of 66 square meters at least. I don't care if the factory looks like barracks—I will build it."

Testing lenses with his eyes (October 12, 1955; 24 years old)

Nippon Contact Lens Research Institute becomes the Nippon Contact Lens Co., Ltd.

It had been six years since Kyoichi established Nippon Contact Lens Research Institute at his family home in Kisogawa-cho, Aichi prefecture, in 1952. He was certain that the contact lens business would grow and be successful. Now he had found the land for his dream factory. His dream, which he had kept alive since he was 19 years of age, was about to come true.

The land was located in Hazama-cho, Showa-ku, Nagoya City, near Chuo Rikaki Seisakusyo, where Kyoichi bought test tubes and flasks for developing plastics. Prior to building a factory, Kyoichi turned Nippon Contact Lens Research Institute, which had been run independently, into a corporation. He changed the name to Nippon Contact Lens Co., Ltd. in 1957. The starting capital was 1,200,000 yen.

Many famous ophthalmologists had visited his small laboratory in Kisogawa-cho. They were prominent figures, including his collaborator, Dr. Yutaka Mizutani, Dr. Tsutomu Sato at Juntendo University, Dr. Hisao Magatani, Dr. Akira Nakajima, Dr. Yasuo Takano at the Tokyo Teishin Hospital, Prof. Jin Ootsuka at the Tokyo Medical and Dental University, and Dr. Hikaru Hamano at Osaka University. After turning the laboratory into an incorporated organization, many people, including Nobuo Nakano from Kyoto and the later president Shizuhiro Shirayama visited his company as well.

As part of his PR activities, he had been presenting his contact lenses at ophthalmology conferences held across Japan. As a result of his efforts, people involved remembered him and his reputation as the "contact lens expert, Kyoichi Tanaka, from Nagoya" grew. He was asked to lecture at many, many places. He became extremely busy because not only did he manufacture and sell contact lenses, but he also served as a lecturer.

Besides his work, drinking was his only outlet. He was getting to that age where a young man must consider his future and family life. He was, in a sense, a late bloomer when it came to women. In fact, he was so busy, that he had almost no time for them. Just before turning the research laboratory into the company, he started receiving *miai* offers (for the introduction for prospective marriage partners). He lived only for his work and tried to decline all of them. However, there was one that was quite difficult to decline: an offer from Dr. Hikaru Hamano at Osaka University. Dr. Hamano had been a mentor who took great interest in Kyoichi and had given him much advice over the years. He also advised Kyoichi on establishing his company. Before incorporating the company, he met the younger sister of Dr. Hamano's relative in Osaka. This young woman, Masako, was to become his wife after a year of courtship. They married with Dr. & Mrs. Hamano as the exalted go-betweens.

Their new home was an apartment on second floor of a building near the Shinpo Pool in Chikusa-ku. Kyoichi had been living in his laboratory in Showa-ku a bachelor. Now as a responsible

Kyoichi Tanaka as a researcher (October 1956; 25 years old)

husband he was to have his own home. With time, his first son was born in 1959. Kyoichi had matured into a responsible head of his family, and now a father.

Trying times

Everything seemed to be going smoothly. Kyoichi was about to face his first major obstacle since the launch of his contact lens company. Dr. Yutaka Mizutani, who had been collaborating with him for a long time, broke away and started his own company called the Nippon Contact Lens Research Institute in Sasajima. Without a physician, Kyoichi was unable to continue clinical testing. He decided to establish Toyo Contact Lens Co., Ltd. with capital of 3,500,000 yen in the Mainichi Building in front of Nagoya Station. Fortunately, he also was able to open the Amano Ophthalmology Clinic on the third floor of the same building in cooperation with Dr. Junzo Amano, an ophthalmologist from Gifu. This clinic became the indispensible location for the gathering of clinical data and methods of refining ophthalmological testing procedures and other various matters in the field of ophthalmology.

Also at that time, Kyoichi's younger brother, Eishun, who had worked for a drug store in Ichinomiya, asked Kyoichi to hire him, and Kyoichi accepted. He currently serves as the chairman of Tomey Corporation. Now all of Kyoichi's siblings had entered the new business of contact lenses.

Now a number of companies that manufactured and sold contact lenses in Japan, including Tokyo Contact Lens Research Center (established with the guidance of the Juntendo University) and Nippon Contact Lens Research Institute (established by Dr. Yutaka Mizutani), enter a phase of marketability. The contact lens market was not a monopoly of Nippon Contact Lens Co., Ltd. (established by Kyoichi) anymore. Despite that, sales of KT lenses named after Kyoichi steadily increased as a pioneer brand. Users acclaimed the lenses as safe, reliable, and having excellent comfort.

Shinto ceremony of purifying a site for new head office building (completed on June 2, 1963; 31 years old)

New head office building (completed on June 2, 1963)

Notice of change of the company name displayed at a conference (1965)

The business: doubling capital every year

Since the factory was not big enough anymore, Kyoichi purchased 495 square meters of land in a rice paddy in Nishiyama-cho, Nakamura-ku in December 1958 and built Nishiyama Factory. One year and three months

>> Proverbs and quotes by Kyoichi Tanaka—Part4

Take responsibility for performing tasks

1983

Each employee must perfectly accomplish his or her tasks. In other words, I believe, taking responsibility for performing tasks contributes to the company development.

International way of thinking and eyes to see the world

1984

*The Japanese word **shiko** has many meanings as different **kanji** combinations.*
***Shiko** (思考) means to think theoretically in a level-headed manner.*
***Shiko** (志向) means to pursue and head toward goals.*
***Shiko** (施行) means to practice.*
***Shiko** (私行) means actions of a private individual.*
***Shiko** (指向) means to aim to reach goals.*
***Shiko** (至孝) means supreme devotion.*
In particular, I believe that we must think theoretically in a level-headed manner, aim to reach goals, and practice.
It is worthless if you have uncertain beliefs or conceptions without clear results.
This means, to practice the "international way of thinking," we must have dogged determination and act passionately in order to accomplish tasks on the right track.

later, he built Higashi-biwajima Factory at 5, Higashi-biwajima-cho, Nishi-ku. A private temple, which had no tombs or Buddhist parishioners, used to be on this land. He bought it just after he received an offer particularly because he felt such a property would be good luck. With 990 square meters of the land he had enough room the factory and a new corporate office for his Nippon Contact Lens Co., Ltd. (the company name was changed into Toyo Contact Lens Co., Ltd. in 1965). A reinforced concrete three-story corporate office building was constructed. One month later, he had an employee dormitory called Shintomi Dormitory constructed in Shintomi-cho, Nakamura-ku.

The reason for an employee dormitory was that he had to ensure housing for employees as soon as possible. Since the growth of the company brought a labor crunch, he started to recruit employees who lived far away from Aichi, including those in the Kyushu area. At that time, the late Fumio Mori, president of Kikuchi Optical Corporation Limited (hereinafter referred to as "Kikuchi Optical") helped Kyoichi as a good advisor. Kikuchi Optical was the largest eyeglass store chain in the Nagoya area. Since Kikuchi was from Kumamoto he recruited employees from Kumamoto every year. He told Kyoichi to recruit employees with him, and Kyoichi decided to hire people from the Kyushu area as well. For several years, Toyo Contact hired people from Kyushu. To this day there remain many employees from that area.

The first time Kyoichi met Mr. Mori was when he entered Tamamizuya. At that time, Ginichi Okada, the owner and president of the eyeglass store within the current Mitsukoshi Department Store, and Mr. Mori, who went on to establish Kikuchi Optical a few years later, were jointly running an eyeglass wholesale company called Nitto Lens. Tamamizuya did business with Nitto Lens, and Kyoichi met Mr. Mori when he went to the company and picked up products as an errand boy.

Although a new office building had been completed, Kyoichi's company was still suffering from a shortage of manpower. So he started to mechanize his commercial production line. He had made all kinds of efforts and pushed to mechanize the production line in order to improve the systems. Construction of a new office building accelerated such mechanization. There were no manufacturers for contact lens production. That was why Kyoichi had to develop all the machines on his own. Those machines became quite sophisticated and innovative. For instance, Kyoichi bought a burnt and dilapidated lathe machine in Kamimaezu, Naka-ku and remodeled it. This machine was used for a very long time. It demonstrates how innovative and sophisticated the equipment was.

Eyeing a global market

In 1959, just before Higashi-biwajima Factory was completed, the First International Contact Lens Conference was held in Chicago. It was the dawn of the era of contact lenses around the world.

In 1960, George Jessen, O.D. (Doctor of Optometry) from Wesley Jessen Inc. and Dr. Pesero from Cuba visited the headquarters in Hazama-cho and Nishiyama Factory with Mr. Mori from Kikuchi Optical and took a close look at contact lens manufacturing processes. In this same year, Dr. Lim and Dr. Wichterle from Czechoslovakia presented a hydrophilic soft contact lens at a conference. The lens was made of hydroxyethyl methacrylate (HEMA), which different from conventional rigid materials at that time. HEMA was found by accident while trying

Dr. GN Jessen (O.D., U.S.) and Dr. Pesero from Cuba visit the headquarters with the late Fumio Mori, the president of Kikuchi Optical (at Nishiyama Factory in 1960; 29 years old)

to develop artificial joints. It was the material that Bausch & Lomb acquired and marketed for the first soft contact lens in the world.

"The world is a big place and changing fast. If I am satisfied with my lenses as they are, I will fall behind the times." Just when he began to feel overwhelmed, Mr. Mori invited him to attend the American Optometric Association Conference planned to be held in June of 1961 in Denver, Colorado, U.S.

"This is a golden opportunity. I need to see the contact lenses developed in the pioneer country for myself." He accepted Mori's invitation. It was Kyoichi's very first trip overseas.

Kyoichi prepared hand-made gifts. As his hobby, he had started making bamboo-inlaid sculpture around 1960 when his business was doing well. Bamboo-inlaid sculpture was a specialty of his father, Kazan Tanaka, who was known in posterity as a famous bamboo sculptor. It seems that Kyoichi inherited an exceptional talent from his father. His skill for sculpture put many professionals to shame even though he had never been taught.

When he went to the U.S. for the first time, he brought his hand-made sculptures as gifts. He inlayed a pattern of ants that was made from ebony wood on simple, shiny pieces of bamboo. He made them into tie clips and cuff links. They were quite popular with the Americans that he met.

He accompanied four prominent members representing the Japanese eyeglass industry, the late Fumio Mori from Kikuchi Optical, Hiroshi Tane from PARIS MIKI Inc., Himeji, Takeo Kanai from Fuji Megane, Hokkaido, and Hiroshi Aizawa from Sendai.

After attending the American Optometric Association Conference in Denver, they visited optometry schools in Chicago, Berkeley and Fullerton. The tour was quite intensive, so they decided to relax in Hawaii on the last day. For Kyoichi, who was always thinking about contact lenses, this was his first vacation since he devoted himself to his job.

President Kyoichi Tanaka, leaving fo the American Optometric Associatio Conference held in Denver (1961)

Chapter 5 **New Challenges**

Development of Japan's first soft contact lens

Kyoichi had been focusing on developing new materials for safe, comfortable, and user-friendly contact lenses since he began to manufacture them. However, Dr. Lim and Dr. Wichterle from Czechoslovakia surprised the world.

They developed hydrophilic soft contact lenses made of hydroxyethyl methacrylate (HEMA.) The material was groundbreaking and totally different from PMMA, which Kyoichi used to produce hard lenses. This revolutionary material could absorb water, and could deliver oxygen through this water to the cornea. This development inspired contact lens manufacturers across the world. Eventually they started to develop soft lenses as well.

Kyoichi advanced development of his own material and presented the Japan's first soft lens ahead of other companies at the 8th Japan Contact Lens Conference held at the Kobe Ishi Kaikan in 1964. It had been four years since Dr. Lim and Dr. Wichterle's presentation. However, his soft lens was still not perfected. It took another nine years before he finally released his new product in 1973. It was called

Workshop of Menicon Soft celebrating th 20th anniversary of the company (Novemb 1971)

the "Menicon Soft."

Just as Kyoichi was about to commence sales of Menicon Soft, a new law that required the approval of the Ministry of Welfare for the sale of contact lenses was enacted. It would take another year before sales could begin. Finally in 1973, Kyoichi and six other competitors received approval all at the same time. This led to an era of intense competition. Thanks to Menicon Soft's excellent comfort and oxygen permeability, sales exceeded those of the other companies. This allowed Kyoichi to further strengthen his research and development to outpace his competitors.

His new soft lens era also allowed far greater advancements in manufacturing technology. Owing to the unique properties of soft contact lenses, many debates over manufacturing techniques for lens design were ignited.

Kyoichi conducted research and development of automated manufacturing techniques with many staff researchers in order to improve the productivity while maintaining a high level of quality. Through these efforts, he developed lathes which could automatically lathe the entire front surface of a contact lens and a separate lathe which could automatically could lathe the entire back surface of a contact lens. Also, he developed a polishing machine which could simultaneously polish the front and back surfaces of a contact lens. In 1968, he was able to develop an "edging machine." This machine allowed the manufacturing of the contact lens edge in a consistent and precise manner. Up until then, edging required experienced factory personnel to work by hand. This new lathe could accurately make the lens edge in an accurate and precise fashion with basic machining techniques instead of hand labor. During this research phase, it was found that the manufacturing quality varied with the seasons. The company soon recognized that the operating environment, especially temperature and humidity, had to be controlled to properly manage high levels of quality. So Kyoichi and his company made the necessary changes to manage the environment of the manufacturing area.

"Thinking back on this era, Dr. Lim and Dr. Wichterle's discovery of HEMA and their consequent development of the spin cast molding system was truly daunting. By simply putting a single drop of material into a mold they could spin cast and mold a lens. This method was protected by patent. Thus, we had to devise other methods of producing soft contact lenses. This caused us a great deal of hard work and extra effort. The spin cast mold only required a drop of material to be placed into a mold and it was simultaneously spun and molded into a final product."

Dr. Lim's manufacturing method was truly a mass production system. Kyoichi's system also involved mass production; however, it did require human care and hand work at crucial areas along the manufacturing process. He marketed his lens as a mass-produced handmade product that was tailor-made for peoples' eyes. Subsequently, the Japanese market received Kyoichi's soft lens with high praise and allowed his company to rise to become the second largest contact lens company in the world. With this, Kyoichi established a new factory in Motozuka-cho, Nishi-ku, Nagoya City in 1972.

Menicon Soft Booth

Menicon Soft Trial Set

Dedicating the company to clinical and basic research

By this time, Kyoichi had already established a clinical laboratory to check actual clinical performance of new materials and designs. For the

development of materials, however, safety tests had to be performed before clinical testing. For this reason, Kyoichi also established a biological laboratory research department, which conducted basic tests with rabbits and guinea pigs. Outside of universities, this was the first time for a contact lens manufacturer to achieve this, and with new materials, it became part Menicon's unique system of research and development.

In general, companies request university laboratories to conduct new research. However, if an ordering party does not have an adequate level of knowledge in this field, it will spend a great deal of time and the results will also not be certain.

Currently, the research center is home to 100 or more rabbits and other animals. Kyoichi plans to deepen the collaborative relationship with universities, use the test facilities to study other aspects of eye disease, and develop medical tools for the future.

Undertaking new rigid contact lens research

As technology advanced around the world, "high oxygen permeability" became a buzzword. Soft lenses were somewhat oxygen-permeable, but old hard lenses were not at all. Many competitors focused on developing "ultra-thin" lenses. However, thinner lenses had both advantages and disadvantages.

Kyoichi decided to develop an innovative oxygen-permeable rigid lens. He wanted to base this on the hard lenses that he had been developing for almost 20 years. He hoped to develop lenses that were oxygen-permeable with excellent comfort, exploiting features of existing rigid lenses. It could be a magical product for users of rigid lenses if the oxygen permeability became high enough that people could even sleep in them. The company released its first oxygen-permeable rigid lens Menicon O_2, which created a new field of contact lenses.

Menicon O_2 was recognized as an innovative lens around the world. It was one of the early steps that made contact lenses ever safer. The Menicon O_2 translated over the cornea with the blink, creating a tear pump, and additionally was oxygen-permeable in and of itself.

At that time, development of oxygen-permeable hard lenses was a global trend. Kyoichi was among the first to develop and release such lenses as a product. An American company had developed a contact

International workshop conference celebrating Menicon's 30th anniversary (November 1982; 51 years old)

Menicon EX product launch (May 1986)

>> Proverbs and quotes by Kyoichi Tanaka—Part5

If you try, you can make it
If your will and effort are strong enough,
you can achieve anything.

1985

If you try, you can make it.
If you have a passion, you will be successful.
A strong will to become and achieve is necessary.
Passion is necessary to achieve one's goals.

Train yourselves

1986

I would like all of you to make the utmost effort to train yourselves physically and mentally and become people who haves harpness, persistence, and grace like a Japanese sword, which is made after being polished over and over. I hope that we will continue to forge ahead as a company on the cutting edge.

lens that was similar to Menicon O_2, but Menicon had obtained patents in different regions of the world. Menicon O_2 became a huge hit and export of the product overseas drastically increased.

In fact, Kyoichi and all his researchers wore Menicon O_2 and were convinced that it was something quite different from traditional products. This product truly added to the success of Menicon. As could be expected, competitors eventually developed similar lenses, but it took seven years after the release of Menicon O_2. The success of Menicon O_2 set the stage for the company to develop product after product, improving the oxygen permeability with each one.

The company released Menicon EX in 1986, which is the first hard contact lens for approved extended wear. People could now sleep in these contact lenses. Menicon Super EX followed in 1991. With regard to oxygen permeability, Menicon EX had a Dk of 55. Menicon Super EX had a Dk of 136, which was an incredible figure compared with conventional contact lens Dk of 0.

Contributing to research into early intraocular lenses for cataract surgery

Kyoichi had one more noteworthy subject of research and development. It was the intraocular lens. He had been thinking about this problem since he first started to develop a contact lens. While getting acquainted with numerous ophthalmologists at universities and talking about various subjects with them, he thought that if the intraocular lens were developed, it could be lauded as deserving a Nobel Prize.

Intraocular lenses are for congenital cataracts, cataracts resulting from injuries caused by traffic and other accidents, and senile cataracts. In general, crystalline lenses are extracted from cataract patients by surgery, but this causes a high degree of hyperopia and patients have to wear eyeglasses with thick convex lenses to make up for the missing lens. If intraocular lenses were developed, the lenses could be implanted during crystalline lens extraction surgery.

In 1954, Prof. Saburo Hayano, an assistant professor at Shinshu University, started to research intraocular lenses and requested that Kyoichi try to manufacture the same. Kyoichi accepted his request. He had his biological research department conduct animal tests repeatedly. Dr. Hayano tested lenses in a clinical setting in 1958 and presented a case report at a conference in 1960. As a result of their effort, they developed Japan's first intraocular lenses in 1977, and subsequently received approval from the Ministry of Health and Welfare. It took about 20 years to develop these lenses. Later, Dr. Hayano reminisced during a lecture, "President Tanaka was good with his hands. Although he was young, he utilized a lathe machine and manufactured the first anterior chamber intraocular lens in Japan. This is the lens for which we will be remembered." His words reflect his thanks and the extent to which Kyoichi focused on this project.

A newspaper article reporting development of an artificial crystalline lens (intraocular lens)

Contact lenses as the window to the soul

Times have changed from Kyoichi's younger days. He started by developing contact lenses with exceptional enthusiasm in an impoverished postwar Japan. He ended up establishing an integrated company covering everything "from materials to products," which is still Menicon's fundamental policy. However, he does not force younger people to follow his way of life.

He makes a speech at the company initiation ceremony every year and always says that the "eyes are the window to the soul, and I believe that to help people who suffer from hyperopia or myopia to recover their vision is certainly a worthy job. Just a small contact lens, with a thickness of less than one millimeter and a diameter just around nine millimeters, can provide you with clear vision. With such lenses, you can see things that you could hardly see before. For these patients, these small lenses are more valuable than expensive jewelry. The contact lens business, which you became involved in, provides emotional support for many, many people. I believe that it is a wonderful business to be proud of."

This speech truly shows Kyoichi's feelings of great honor in providing clean vision to people and the reward of taking on new challenges.

Establishing an international Business

The company that Kyoichi had started with his brother Toyoyasu had grown to become one of the major international contact lens manufacturers by 1991. Kyoichi remained active on the front lines, issuing instructions to his staff. Even after the company grew into an industrial giant, he took on new challenges as always.

His dogged determination was actually realized when the company released Menicon Soft S in 1994. It was a thin and high oxygen permeable soft lens with 72% water content. Then in 1997, Menicon developed Menicon Z, which to this day remains the most oxygen permeable rigid lens in the world. It had been some time since companies in the contact lens industry had started to compete in developing bifocal contact lenses, designed for an aging society. Of course, Kyoichi focused on development of those bifocal lenses as his next challenge. The design for bifocal lenses, which was considered difficult, was almost completed around 1995, and results of clinical tests were favorable. The lenses showed excellent visual acuity and other attributes. However, Kyoichi was not satisfied, and he was still concerned about vision quality.

He took five more years and thoroughly improved the design to finally develop a lens he could be proud of. As soon as this bifocal contact lens, Menifocal, was released, it met with enthusiastic response.

While many companies had withdrawn their corporate support for the arts due to economic slowdowns, Menicon actually interested its activities. A Menicon gallery called "Menio" was opened to provide young aspiring artists with opportunities to display their work. Menicon Cup was an all-star championship for junior

Full view of Menicon headquarter building (March 1995)

Emperor's Medal with Blue Ribbon (November 1995)

Menicon Z released (September 1997)

high school soccer teams. Menicon also sponsored the performing arts, providing an opportunity to listen to music. It created an environment for people's spiritual enrichment through a series of classical music concerts called the Menicon Super Concert Series.

Menicon's new headquarters were completed in 1995. Among other milestones, the company obtained ISO9001 certification in 1996 and the CE mark, which indicates that products meet international quality assurance standards. This represents a higher standard than the JIS mark. The CE mark standard was essential to do business in Europe. For such reasons, the company established a quality management system in order to promote its business development on a global scale meeting the often stricter quality assurance standards.

As a result of these efforts, Kyoichi won the award for pharmaceutical contributors given by the Minister of Health and Welfare in 1992 and the Medal with Blue Ribbon for philanthropy, inventions or improvements in the autumn of 1995.

Toward a new era

With the 21st century rapidly approaching, Kyoichi often thought about Menicon in the coming generation and said the following.

"Industrial structure had changed due to market entry of foreign companies and other factors. The 21st century is just around the corner. This coming age will be a 'young people's era.' My responsibility is to develop future leaders of Menicon and the contact lens industry for the next generation."

June 2000, the last year of the 21st century, Kyoichi handed over his mantle to his first son, an ophthalmologist, Dr. Hidenari Tanaka. He decided it was time to watch over the future of the contact lens field from the position of the Chairman of the company.

Since the foundation of the company, Kyoichi had devoted himself wholeheartedly to contact lenses, and Dr. Hidenari Tanaka has thoroughly inherited this spirit from his father. Newly appointed president Dr. Tanaka formulated a new company philosophy, known as "neo-original management." It symbolizes his determination to continue the tradition of originality created since the foundation of the company, as to further develop it, take on new territories, and create new businesses from a modern viewpoint.

In 2001, Menicon celebrated its 50th anniversary, 51 years after Kyoichi met an American commander's wife by chance. The company announced a new mission in front of a great number of ophthalmologists, medical personnel, and industry officials. For Menicon's next 50 years, the company continues to take on new challenges under the banner of "Menicon Eye Wave" and its slogan "We are responsible for making the eyes of all people shine."

Kyoichi said, "The first stage of my product making for Menicon has been completed. I believe that it is time for the younger generations to fly ahead in the world as they take over Menicon's originality and work to further develop it."

Menicon's second stage of Kyoichi's vision has already begun.

(Omitted titles from names)


新社長に田中英成氏
メニコン 若返りへトップ交代
中部経済新聞

A newspaper article reporting inauguration of new President (June 29, 2000)

Dr. and Ms. Tanaka as new President (left), Mr. and Ms. Tanaka as new Chairman (right)

Corporate history

Year	Month	History
1950	Nov.	Kyoichi Tanaka decides to start research into contact lenses after hearing from an American military commander's wife that she possessed contact lenses
1951	Feb.	Japan's first corneal lens developed
1952	Jul.	Nippon Contact Lens Research Institute established in Kisogawa, Haguri-gun, Aichi
1957	Jul.	Nippon Contact Lens Co., Ltd. established with capital of 1.2 million yen in Hazama, Showa-ku, Nagoya
1958	Aug.	Toyo Contact Lens Co., Ltd. established (counseling room in the Mainichi Building)
	Dec.	Nishiyama Factory established in Nishiyama, Nakamura-ku, Nagoya
1960	Apr.	The Shintomi Dormitory for employees established in Shintomi, Nakamura-ku, Nagoya
1963	Jun.	New head office building constructed in Higashi-biwajima, Nishi-ku, Nagoya
1964	Jun.	Soft contact lenses presented for the first time in Japan at the 8th Japan Contact Lens Conference held at the Kobe Ishi Kaikan
1965	Jul.	Company name changed from Nippon Contact Lens Co., Ltd. to Toyo Contact Lens Co., Ltd.
	Aug.	New head office building constructed in Higashi-biwajima, Nishi-ku, Nagoya
1966	Aug.	"Ballastor Lens" contact lenses for high myopia released
1967	Nov.	Trademark "Menicon" registered
1968	Jun.	1st contact lens workshop held at the headquarters in Higashi-biwajima
1969	Sep.	Continuing education on contact lenses started
1970	Mar.	Company's products put in a time capsule at the Japan World Exposition 70'
	Dec.	"Menicon 8" released
		"Soft gonioscope (T.T type)" released
1971	Aug.	Tomey Sangyo Corporation (affiliate) established
	Nov.	20th anniversary of the company; "Menicon Soft" workshop held at the Westin Nagoya Castle
	Dec.	New headquarter constructed in Biwajima, Nishi-ku, Nagoya
1972	Apr.	Nagoya Learning Center established on the fourth floor of the head office (currently Biwajima laboratory)
1973	Jan.	"Menicon Soft" released
1974	May	Motozuka Factory, an additional factory for soft lenses, established in Motozuka, Nishi-ku, Nagoya
	Oct.	1st Toyo Contact Lens International Workshop Conference held at the Westin Nagoya Castle
1975	Mar.	Prototype of intraocular lens developed; clinical tests started
1976	Jun.	Menicon Europe established in France
1977	Nov.	25th anniversary of the company; "Menicon O_2" Japan's first RGP lens, presented at the Toyo Contact Lens International Workshop Conference held at the Westin Nagoya Castle
1979	Jan.	"Menicon O_2" released
	Jun.	Trademark of Menicon registered
	Nov.	Toyo Medical (affiliate) established
1982	Jun.	New headquarter for Tomey Sangyo Corporation completed Menicon established at 3-21-19, Aoi, Naka-ku, Nagoya Sales department launched under the name of Menicon after being separated from manufacturing department Research and manufacturing department continued under the name of Toyo Contact Lens Co., Ltd. "Menicon Soft M" released
	Oct.	Headquarter of Menicon constructed
	Nov.	30th anniversary of the company; International Workshop Conference held at the Westin Nagoya Castle
		"Menicon O_2 SP" high oxygen-permeable hard contact lens released
		Received the "Javal Award" from the Contact Lens Association of Optometry
1983	Jan.	"Laboratory Center Award" received from the Medium and Small Business Research Institute at the Tokyo Chamber of Commerce and Industry
1984	Nov.	Seki Factory established
1985	May	The first Japanese approval for manufacturing intraocular lenses obtained
1986	May	"Menicon EX" released
1987	Oct.	Seki Factory expansion
	Nov.	Toyo Contact Lens Co., Ltd. (research/manufacturing) and Menicon (sales) integrated; New Menicon created
1988	Jan.	Menicon Germany (overseas subsidiary) established in Germany
	Mar.	"Menicon Soft MA" released
	Sep.	Distribution centers opened at five locations across Japan

Year	Month	History
1989	Jul.	International Design Expo '89 (July 15th – November 26th) sponsored
		Number of visitors to "Asahi Menicon Pavilion" reaches 1 million
	Sep.	U.S. FDA approval for "Menicon Super EX" received
1990	Mar.	Attended the 7th International Medical Contact Lens Symposium in Singapore
	Apr.	Third building of Seki Factory completed
1991	Jan.	"Menicon Super EX" released
	Oct.	Sponsorship for a series of classical music concerts called "Menicon Super Concert" series started
	Nov.	40th anniversary of the company; international symposium held at the Nagoya Congress Center
1992	May	Menicon Pharma (overseas subsidiary) established in France
	Sep.	"Menicon Soft 72" released
	Oct.	Received the "Minister of Health and Welfare Commendation for Pharmaceutical Contributors"
		Received "Takagi Award" from the Precise Measurement Technique Promotion Foundation
	Nov.	Received the "Award of the Minister of Social Insurance Agency"
	Dec.	Received the "Chunichi Shinbum Award" at the 6th Chunichi Industrial Technology Prize
1993	Feb.	New Menicon merges with Toyo Contact Lens Co., Ltd.
	May	Menicon Pharma establishes a new factory for manufacturing care products in France
1994	Feb.	An official supply agreement concluded with the Japan Professional Football League (J.League)
	Apr.	The Menicon gallery "Menio" opens at the Mainichi Building to support young designers
	Aug.	"Menicon Soft S" released
	Oct.	"Menicon Soft 72 Toric" released
1995	Mar.	New headquarter building completed in Aoi, Naka-ku, Nagoya
	Aug.	Sponsorship for "Menicon Cup, the East-West Game for Japan's U-15 Youth Club Soccer (U-15)" starts
	Oct.	Menicon R&D Center established in Kasugai, Aichi
	Nov.	Tanaka Kyoichi receives the Medal with Blue Ribbon (award ceremony on Nov. 12 at Imperial Palace)
	Jan.	A fund at the Massachusetts Institute of Technology (MIT) established by Menicon
1996	Jun.	"Team Menicon SARD" formed and debuted at 24 Heures du Mans
	Aug.	Obtained ISO:9001 and CE mark
	Dec.	Menicon's website "MENICON SEE EYELAND" launched
1997	May	"Meni-One Lens," Japan's first intraocular lenses for dogs, released
	Sep.	"Menicon Z" released
1998	Aug.	Biwajima building completed at Biwajima, Nishi-ku, Nagoya
1999	Nov.	New business "Light for cataract dogs" launched
2000	Feb.	Memorial plaque for the birthplace of contact lens installed at Tamamizuya
	Jun.	Dr. Hidenari Tanaka appointed as the President, Kyoichi Tanaka appointed as the Chairman
		"Menifocal" bifocal contact lens released
2001	Jul.	New "Mels Plan" membership system started
	Nov.	Menicon's 50th anniversary held at the Nagoya Congress Center
2002	Feb.	Menicon Techno Station completed in Kakamigahara, Gifu
	Sep.	"Monthwear (Menisoft)" soft contact lens for one-month use released
2003	May	Meni-One established as independent company
	Dec.	Menicon Holdings Europe established in France
2004	Jan.	Menicon UK established in England
	Oct.	Tanaka Kyoichi receives the "Special Prize" from the U.S. Contact Lens Manufacturers Association (CLMA)
2005	Jul.	Menicon-Mandarin Asia Pte. Ltd. established in Singapore
	Oct.	"Monthwear Toric" soft toric contact lens for one-month use released
		"Chevalier Award" of the L'ordre national du merite from France received
	Dec.	Kyoichi Tanaka receives the "Founders Award" from the American Academy of Ophthalmology
	Mar.	"Epica Cold(MeniCare Soft)" multi-purpose soft contact lens solution released
	Jul.	"Avansee" foldable intraocular lens released
		Kyoichi Tanaka received the "Higashi-kuninomiya Memorial Award"
	Oct.	"Oxygen-permeable hard lens for 30-day continuous wearing" obtains approval for manufacture and sale in Japan

History of public positions

Organization name	Title	Year and period
Contact Lens Trade Union	Vice chairperson	Apr. 1962-Mar.1963
	Executive director	Apr. 1963-Mar.1964
	Chairperson	Apr. 1964-Mar.1966
	Vice chairperson	Apr. 1966-Sep.1967
	Commissioner	Oct. 1967-Mar.1968
	Vice chairperson	Apr. 1968-Mar.1970
Contact Lens Association (name changed)	Vice chairperson	Apr. 1970-Mar.1972
	Chairperson	Apr. 1972-Mar.1974
	Vice chairperson	Apr. 1974-Mar.1978
	Executive director	Apr. 1978-Mar.1980
	Chairperson	Apr. 1980-Mar.1982
	Vice chairperson	Apr. 1982-Mar.1985
	Chairperson	Apr. 1985-Mar.1990
	Honorary chairperson	Apr. 1990-Apr.1994
Japan Contact Lens Association (name changed)	Honorary chairperson	Apr. 1994-present
Japan Contact Lens Association*1	Executive director	Jul. 1962-Mar.1964
	Vice chairperson	Apr. 1964-Mar.1966
Japan Contact Lens Committee	Vice chairperson	Apr. 1980-Mar.1982
	Commissioner	Apr. 1982-Mar.1985
	Vice chairperson	Apr. 1985-Mar.1990
Japan Federation of Medical Device Association	Commissioner	Feb. 1984-Mar.1990
Japan Medical Instrument Association	Commissioner	Oct. 1985-Dec.1986
Aichi Opticians Association	Commissioner	Jun. 1976-May 1980
(formerly Aichi Opticians Retailer Association)	Vice chairperson	Jun. 1980-May 1983
(formerly Nagoya Optics Retailer Association)	Commissioner	Jun. 1983-May 1990
	Advisor	Jun. 1990-present
Japan National Society for the Prevention of Blindness	Councilor	Apr. 1989-Mar.2000
Aichi Television Broadcasting Program Council	Committee	Jul. 1995-Jun.1998
	Chairperson	Jul. 1998-Jun.2001
Japan-Europe Friendship Association	Advisor	Jul. 1996-Jun.2003

*** 1:** Japan Contact Lens Association
The Japan Contact Lens Association was established July 12, 1962, for ophthalmologists who provide medical care with contact lens and contact lens manufacturers to exchange opinions.
The organization is not the current Japan Contact Lens Association.

Menicon: Company Profile

Established February 8, 1951

Established as a corporation organization in 1957

Capital:	1,769,340,000 yen (as of March 2006)
Representative Chairperson:	Kyoichi Tanaka
President and CEO:	Hidenari Tanaka
Number of employee:	901 (as of March 2006)
Business description:	Contact lens business, care product business, etc.
Headquarters address:	3-21-19, Aoi, Naka-ku, Nagoya, Aichi, 460-0006, JAPAN
Telephone:	+81(0)52-935-1515
Partners:	Hospitals, ophthalmic clinics, eyeglass stores, drug wholesalers across the nation, overseas clients (exporting to 20 or more countries around the world, focusing on the U.S, Europe, Oceania, Asia, and other areas)

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