



Minolta
There's a Reason

C H I Y O D A K O G A K U S E I K O C O . , L T D .



Minolta organ “ロッキョール Rokkor” has an average circulation of 30,000 a month in Japan.

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Outline of **CHIYODA KOGAKU SEIKO K. K.**

- Name of the Company :** Chiyoda Kogaku Seiko K. K.
President : Kazuo Tashima
Capital : ¥ 560,000,000.
Establishment : in 1928. Incorporated as a joint-stock company in 1937.
Locations :
Head Office : 23, 3-chome, Kitakyuhoji-machi, Higashi-ku, Osaka
Phones : Semba (25) 2216-8, 528 **Cable Address :** ... "CHIYOKO OSAKA"
Tokyo Office : 6-chome, Higashi, Ginza, Chuo-ku, Tokyo
Tokyo Service Station : 3-chome, Ginza, Chuo-ku, Tokyo
Fukuoka Service Station : 8-chome, Shitauomachi, Fukuoka
New York Office : 150, Broadway New York. 38. N. Y.
Factories :
Head Plant : 23, 3-chome, Kitakyuhoji-machi, Higashi-ku, Osaka
Sakai Plant : 1368, Mimihara-cho, Sakai City
Itami Plant : 850, Aza-Higashijinen, Kitamura, Itami City
Toyokawa Plant : 10, Koki-nishi, Ushikubo, Toyokawa City
Nishinomiya Laboratory : 21, Omori-cho, Nishinomiya City
List of the Company's Products :
Cameras : "Minolta-35" "Minolta 'A'" "Minolta 'A 2'" "Minolta Super 'A'"
 "Minolta-16" "Minolta Autocord" "Minolta Autocord Model L"
Lenses : Lenses for Cameras Lenses for Enlargers Lenses for Studio use
Projector : Minolta Mini Projector
Optical Glass of various kinds :
Camera Accessories :
Bankers : The Bank of Kobe, The Mitsubishi Bank
 The Daiichi Bank, The Kyowa Bank
 The Sanwa Bank, The Nippon Kangyo Bank



President: Kazuo Tashima





History of the Company

- 1 9 2 8 Kazuo Tashima, now the president of the company, first established the Mukogawa Plant and commenced production of cameras. The plant was in Naruo Village, a scenic part of the country halfway between Osaka and Kobe, the two largest cities in central Japan.
- 1 9 3 1 Reorganized into the Mita & Company (Limited Partnership), all the products of the company were given the name of "Mitoita".
- 1 9 3 6 A branch plant was established in Amagasaki City (situated between Osaka and Kobe), where the company started the production of a twin lens reflex camera, the first of its kind in Japan. The plant was named Amagasaki Plant.
- 1 9 3 7 Another new plant was established in Sakai City, 10 miles south of Osaka, where lenses for cameras were made. It was called Sakai Plant.
- The company was further reorganized into a joint-stock company. The new company was named "Chiyoda Kogaku Seiko K. K." with its head office in Osaka City.
- 1 9 3 9 Komatsu Plant was newly installed in the west of Mukogawa Plant.
- 1 9 4 2 Construction of the Optical Glass Melting Plant was started at Itami City, near the Itami International Airport.
- 1 9 4 3 The company absorbed the Mukogawa Camera Mfg. Co., which was newly named Nishinomiya Plant.
- 1 9 4 4 Itami Plant was completed and Optical Glass Melting was started there.
- 1 9 4 5 Mukogawa, Komatsu and Amagasaki Plants were destroyed during bombing raids.
- 1 9 4 6 The Head Office was removed to the present site and the evacuated equipment and machines were also brought back to establish the new Head Plant there. The production of high class cameras of small size were resumed at the plant. The company also bought a part of the former naval arsenal at Toyokawa. Production of cameras and opera glasses was again started at this new Toyokawa Plant.
- 1 9 5 3 Lens Polishing Plant was newly attached to Sakai Plant. The Plant is fully equipped with arrangements for constant-temperature, constant-humidity and air-cleaning.



OSAKA HEAD OFFICE & HEAD PLANT

**ITAMI OPTICAL GLASS MELTING PLANT
NISHINOMIYA LABORATORY**

FUKUOKA SERVICE STATION

SAKAI LENS PLANT

TOYOKAWA PLANT


JAPAN

TOKYO SERVICE STATION

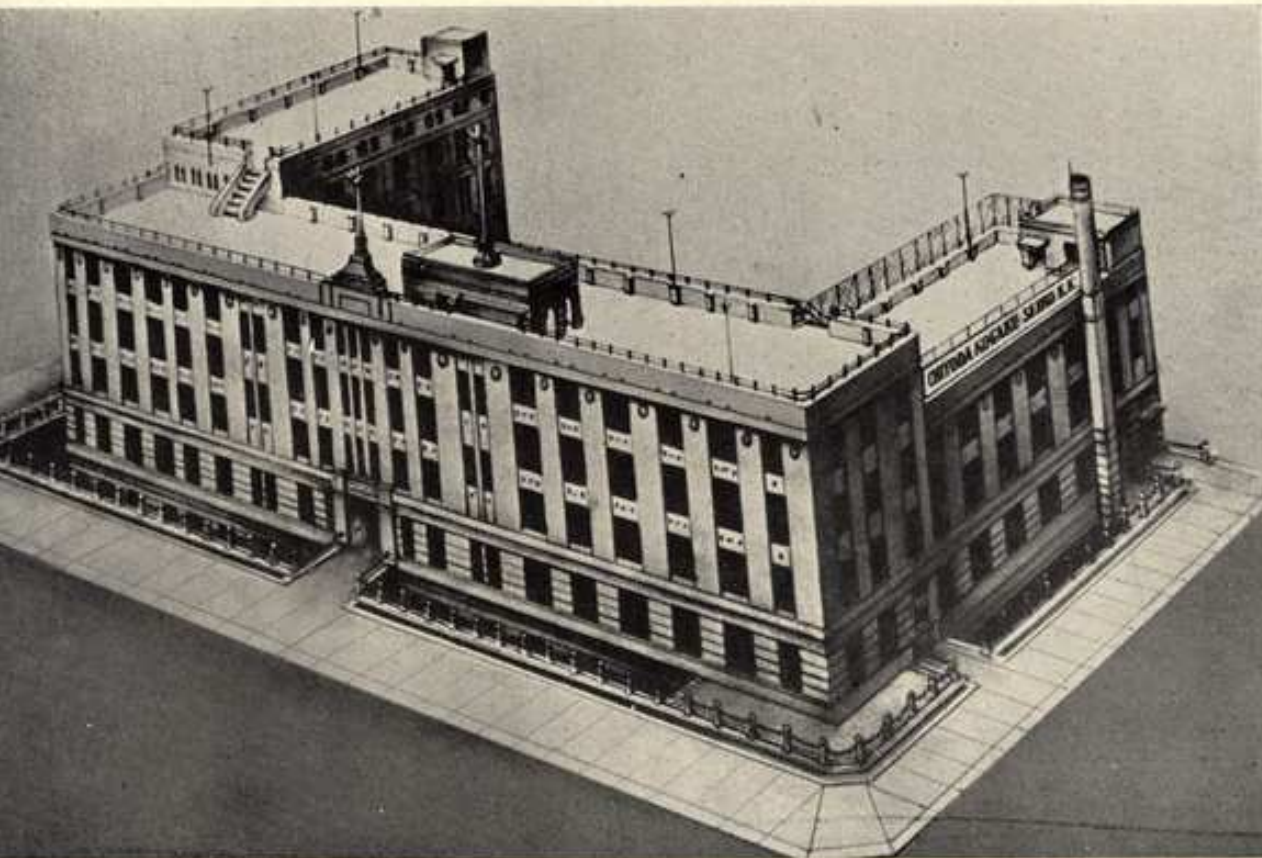
PACIFIC OCEAN



Minolta Plants



The Head Office and Head Plant are both situated in the business center of Osaka City. Minolta which has the longest history in Japan as a twin lens reflex camera is used most widely in the country with the highest percentage of winning in photo contests. Minolta Autocord and Minolta Autocord Model L twin lens reflex cameras, are produced at the head plant. Minolta-16 and Minolta Mini Slide Projector are also manufactured at the plant.



The Itami Optical Glass Melting Plant is on a hill in the scenic district north of Itami City. Because of the pure air and quiet surroundings the locality is suitable for the manufacture of optical glasses. Various kinds of optical glasses including those of the highest quality required by lens technicians as well as general optical glasses are manufactured at this plant.



The company's house



The Sakai Lens Plant is located ten miles south of Osaka City. In order to keep the plant in the best condition for lens manufacturing it maintains even temperature and humidity and is cleared of dust by means of automatic devices. Opaque lens made at Itami plant is polished at this plant and is placed in the lens barrel to be made into a finished lens. All lenses used in Minolta cameras are produced at this plant. "Minolta 35" and "Minolta Super A" cameras which are in wide demand both at home and abroad are also manufactured at this plant.



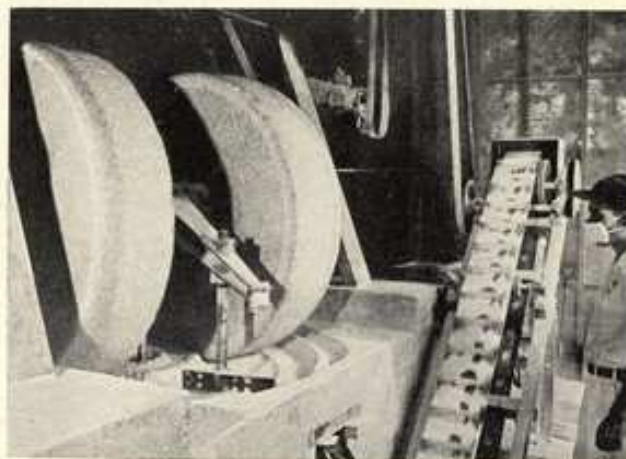
Toyokawa Plant is situated in Toyokawa City, a garden city located midway between Tokyo and Osaka. "Minolta A" and "Minolta A2" are made at this plant.



Nishinomiya Laboratory which is in the north of Nishinomiya City conducts research work on foreign and domestic cameras, optical machinery and materials.

Manufacturing of Optical Glass at Itami Plant

Pots in which are placed blended materials are in the making. About a ton of materials can be melted at one time in this pot.



The materials for melting pot are smashed minutely.



The completed pots are dried by electricity and put into the melting furnace to be hardened sufficiently.



When the pot is shaken the contents crack together with the pot. And lumps of glass of high quality are singled out while the inferior parts having strains or bubbles are cast aside.



Materials are placed into the pots through small windows of the melting furnace and are heated up to 1,800 degrees F. The ingredients are periodically mixed with an agitator and the pot is taken out after the materials are completely melted.



Various materials for optical glass such as silica, sodium carbonate, minium, boracic acid, barium nitrate, barium carbonate, potassium carbonate, potassium nitrate acid, arsenious acid, alumina, etc. are blended together according to the kinds of glass required.







The glass pieces thus selected are accordingly put into square boxes of suitable sizes made of fire-proof clay. When heated in an electric furnace, the glass pieces become square. The square pieces thus made are called blocks.

The two opposite surfaces of the block are polished so that the inferior portion are easily found.






A part of the block is polished into prism form and the reflection index of the glass is examined through a spectro-meter to see whether it matches the index of lens design.



The parts which have strains, bubbles and impurities are marked to be cut off.



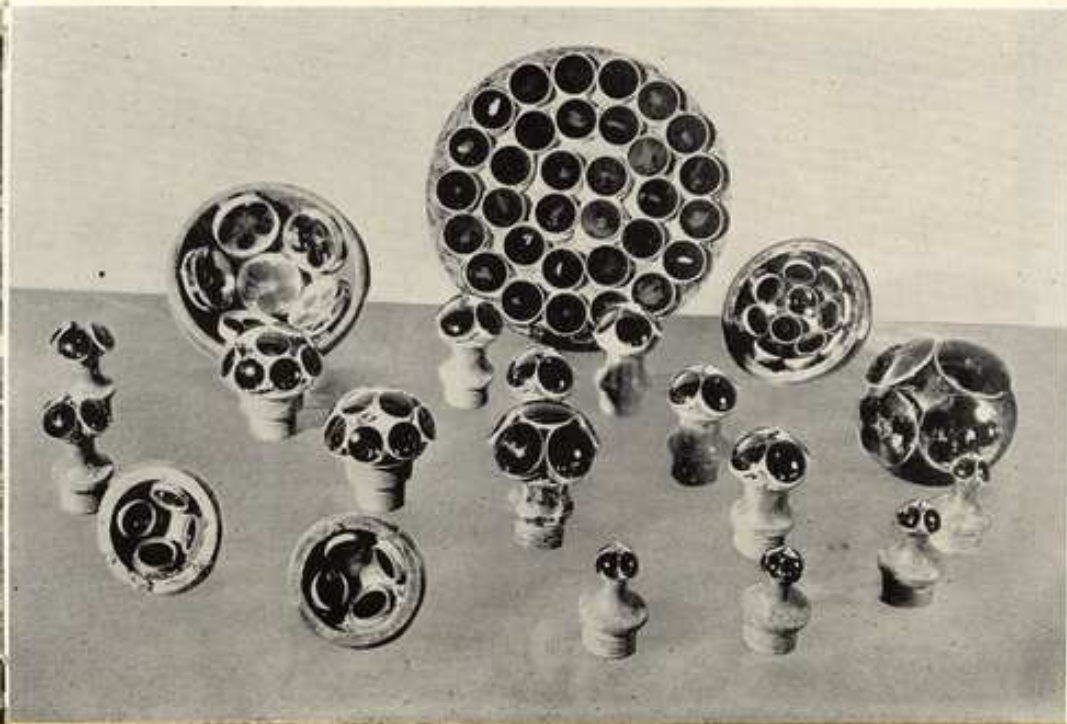
Optical glass products are all finally put into the electric annealing furnace. Distortions inside these glasses are corrected while they are left for a week at a constant temperature.



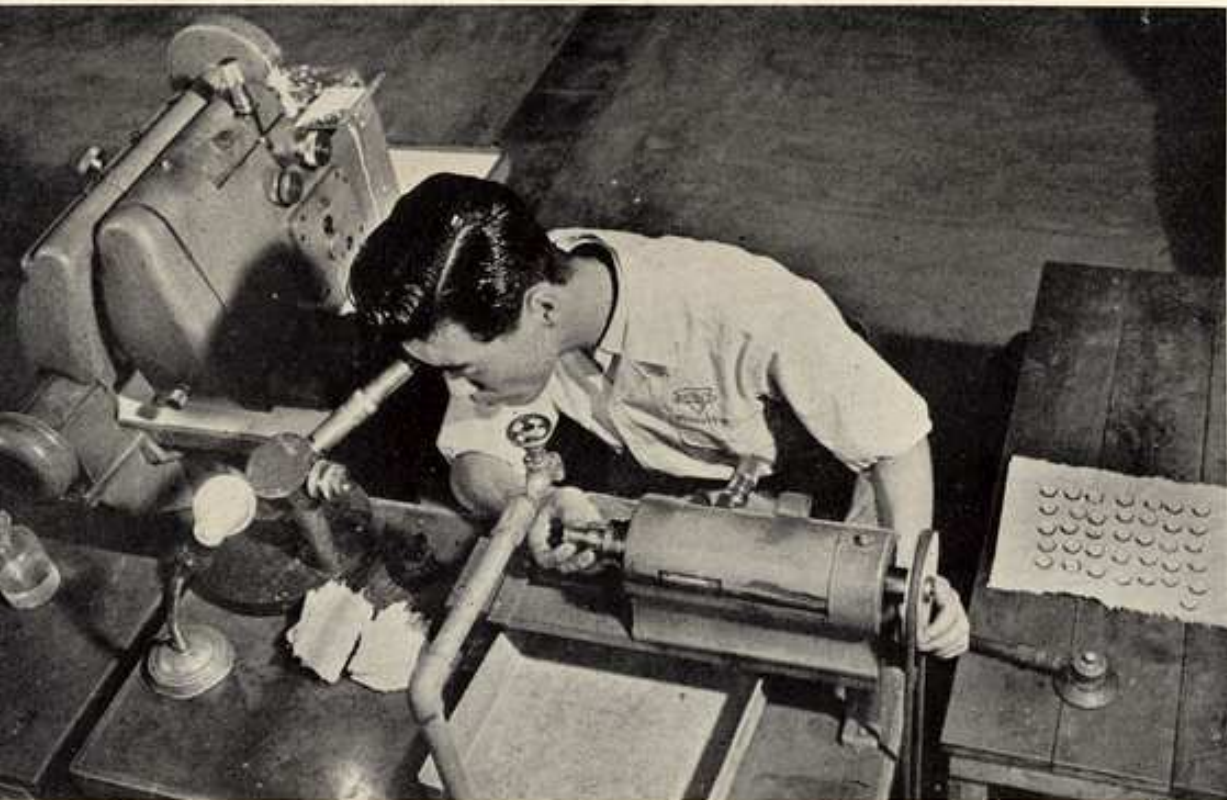
Lens Manufacturing at Sakai Plant



The opaque lens brought to this plant from the Itami Optical Glass Plant is first subjected to rough polishing with carborundum and industrial diamonds by the curve generator. Then its convex and concave surfaces are polished with increasingly finer polishing materials up to a point very close to the designed index.



After the rough polishing, the lenses, many at a time, are mechanically polished by a lens polishing machine. Finally the lenses are polished to the highest degree of precision by means of special polishing materials.



The lenses of which both surfaces have been polished are given an optical center line by means of an automatic lens centering machine.

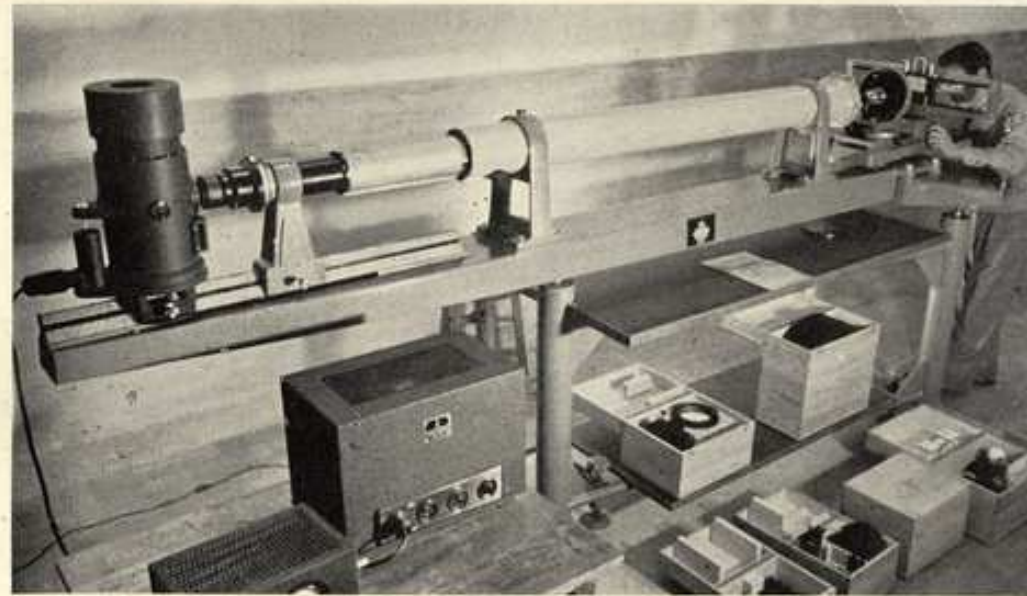


The polished lenses are cleaned. Those with defects are removed.

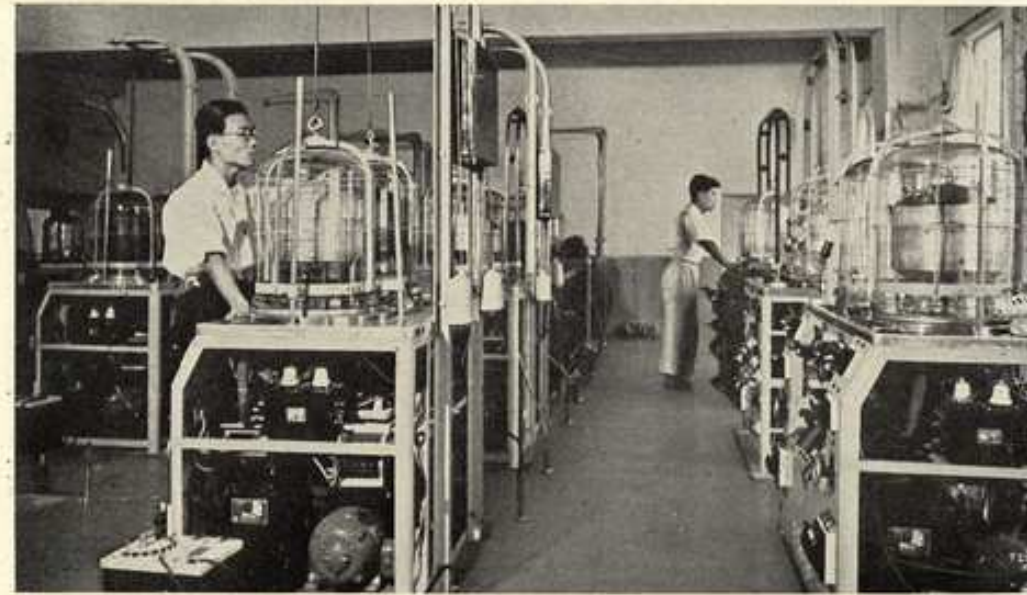




This Optical Bench is used for examining test lens and corrected design lens. When a test lens is made it is examined carefully with the Optical Bench to test its efficiency. All data on any lens can be obtained through this bench and we make comparisons with and study first rate lenses from other parts of the world.

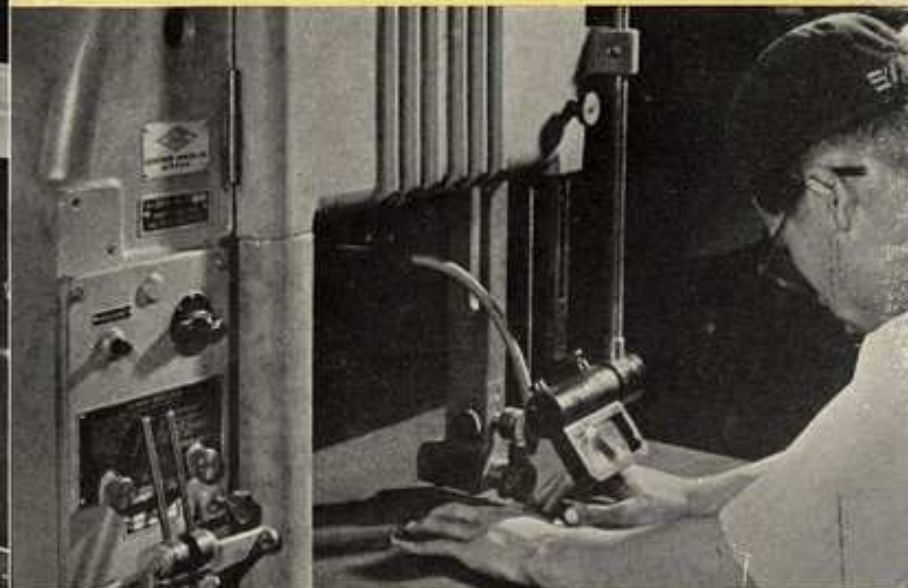


In order to remove the reflection of a lens so that almost 100 per cent light may reach the photographic plate and film, a thin film of flouride coating is applied to the surface of the lens.



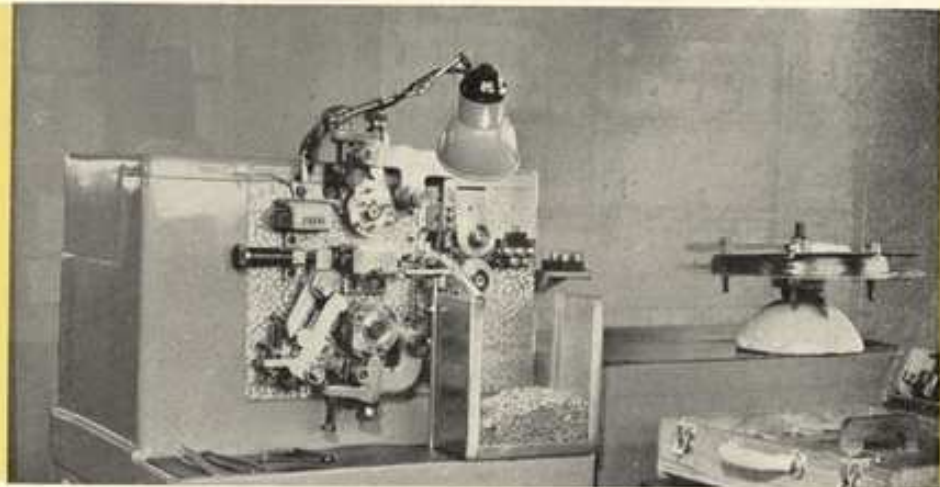
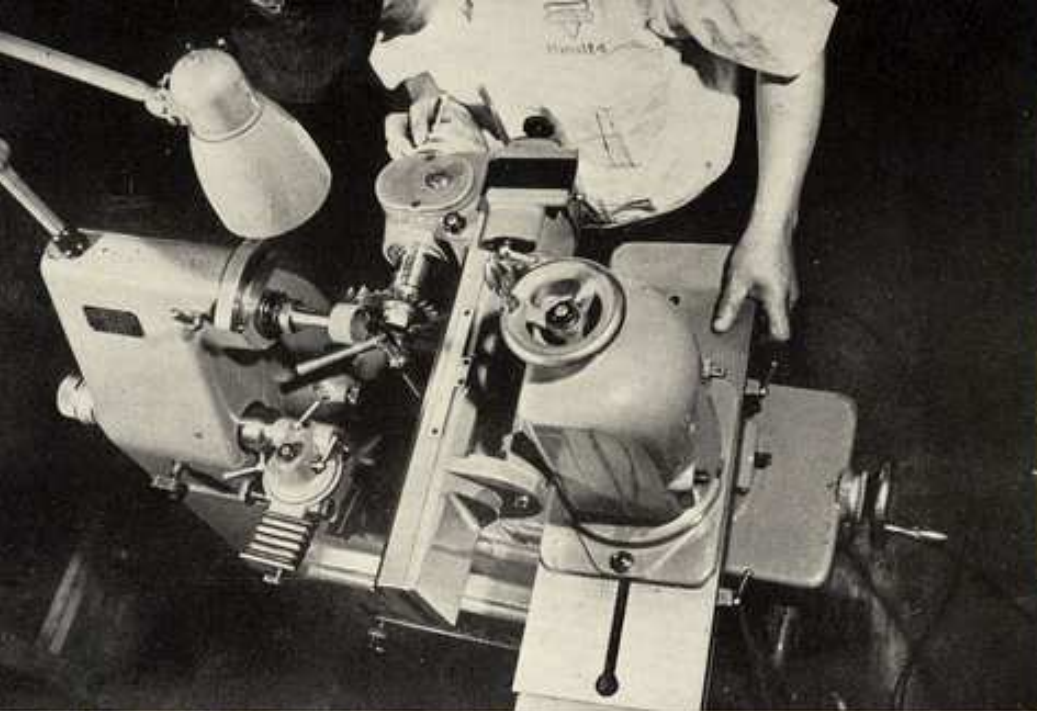
Camera Making at Our Plants

After the company executives who look into the trend of the camera world decide on the type of camera they desire to sell and the retail price estimate, designers are mobilized to make one test product. With this test camera as the model, repeated tests are made with all knowledge available. After a collective plan is decided on, a draft is drawn up including even minor parts and accessories. Attached materials are also designated and work is thus begun at the plants. Based on the draft, pilot production of tens of cameras takes place. These test products are put into actual use with improvement made after agreement of views and the designs and materials undergo repeated changes before the final product comes into being. Then mass production gets underway.



Gauges for making camera parts, steel patterns, small equipment indirectly connected and special equipment directly connected with processing are manufactured, and various kinds of machine tools are turned into exclusive machines.

In this metal-working department diecast bodies are processed with milling machines, lathes and drilling machines.



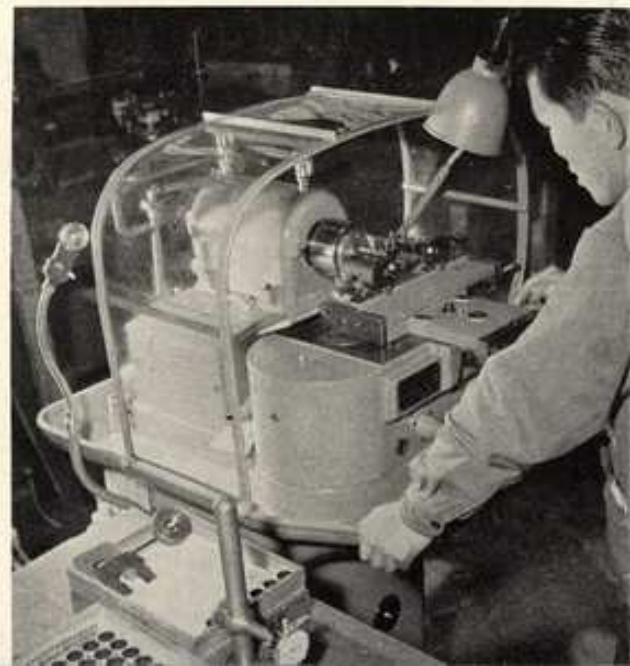
Various springs are automatically wound and completed in the designed size precisely.




The polishing machine has various edges specially designed which rotate with extra high speed to plane the metal little by little.




The parts cut in the final size are placed on the lathe which automatically makes the step or screw on the parts.

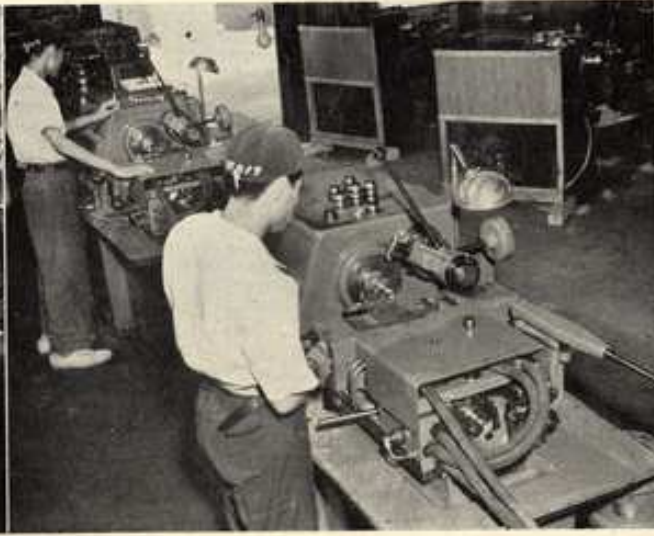
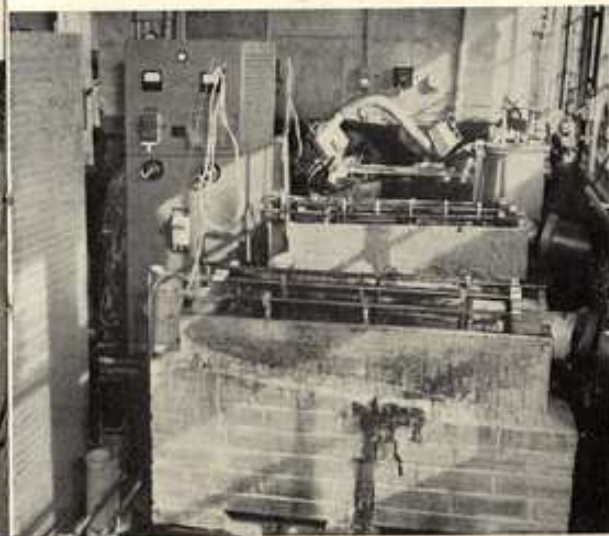
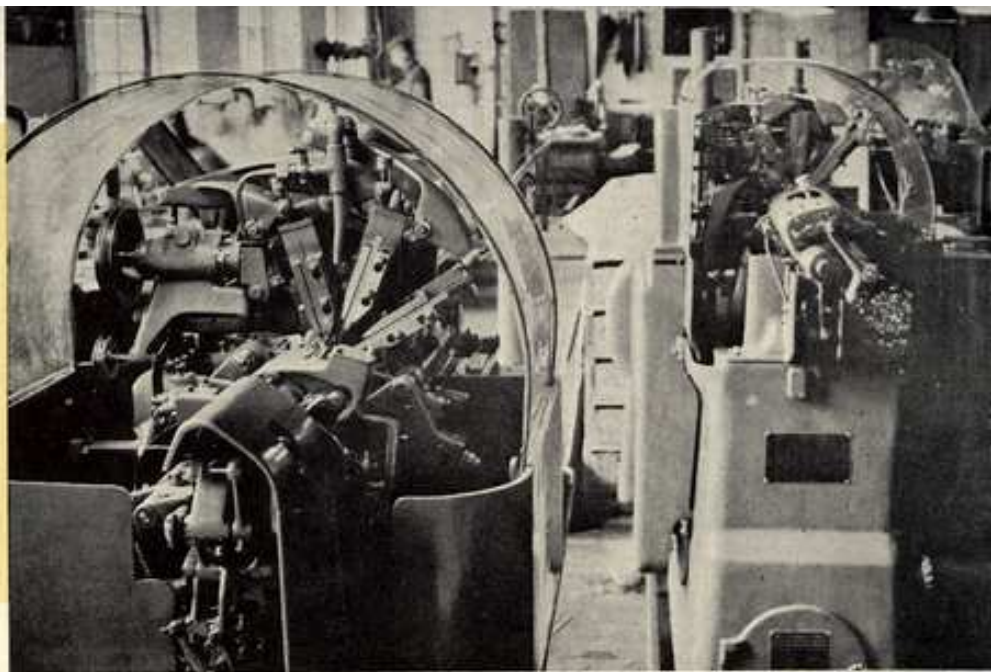




The some of the finished parts are metal plated for increasing durability as well as refined appearance.



Lens barrels, screws, nuts etc. of various shapes and sizes are made precisely and speedily by the automatic lathes.





The parts made are examined with a microscope enlarged 40 or 50 times and occasionally 100 times to see whether they completely match the draft.

The materials are also inspected to see whether they are fit for production purposes.



The different parts which are inspected and passed at their respective plants only are turned over to the camera assembling department.

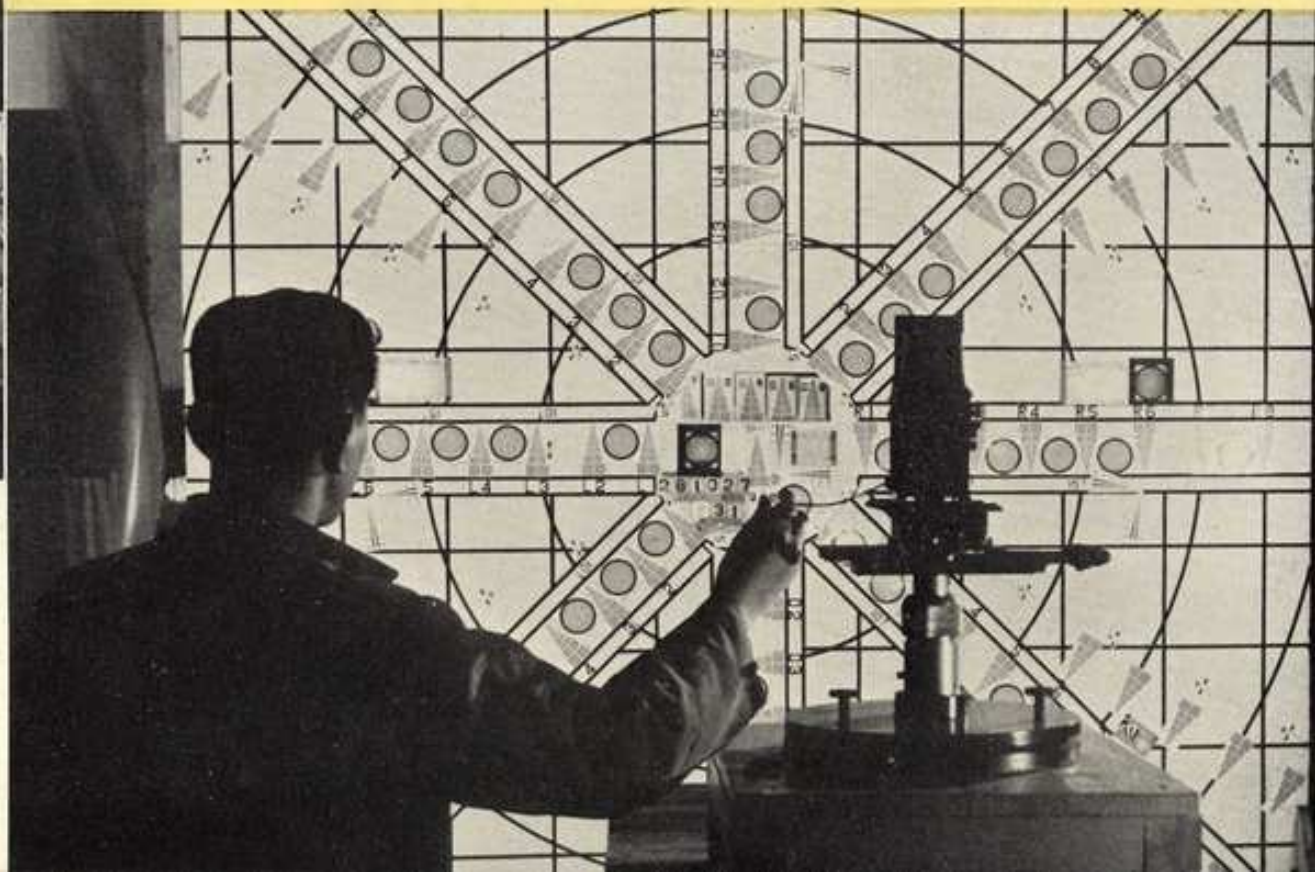


Test Chart. Test photographing is being made to see whether a finished camera is as efficient as designed and whether the lens is 100 per cent sharp. Each assembling plant makes a test chart examination in the final process.



Helicoid test

The test machine moves the helicoid portion in and out repeatedly ascertaining the accuracy and the durability.





Minolta 'A'



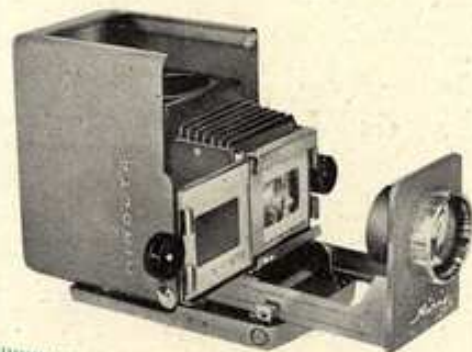
Minolta 'A-2'



Minolta Super 'A'



Minolta-35



Minolta Mini Projector



Minolta-16



Minolta Autocord



**Minolta Autocord L
Built-in E. Meter**



Minolta Camera advertisements are now being carried in those magazines and newspapers.



Printed in Japan.

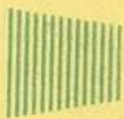




C h i y o d a O p t i c a l & F i n e - m e c h a n i c a l C o . , L t d .



CHIYODA KOGAKU SEIKO CO., LTD.



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