



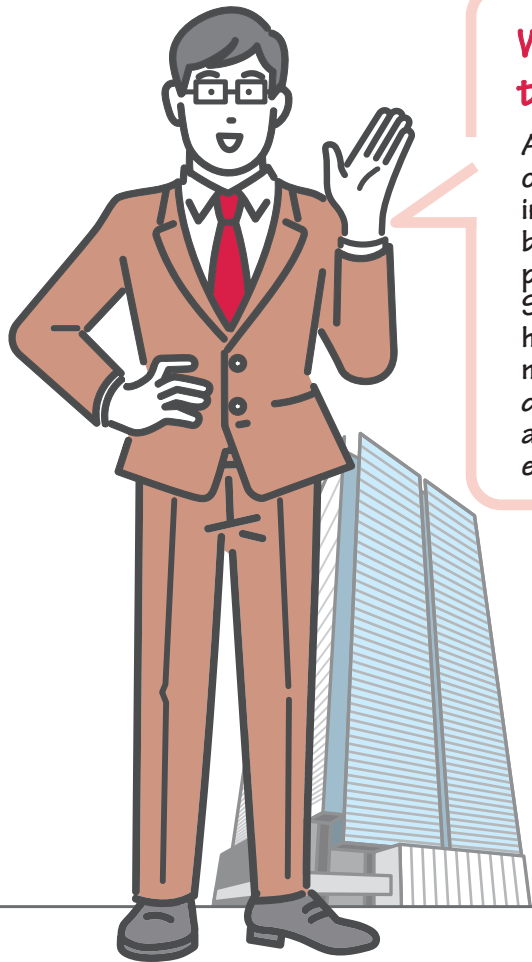
Trustworthy manufacturing

All About the Banknote Manufacturing Book



Tokyo Plant

We are dedicated to steadfast missions and adapting to evolving needs through our commitment to “trustworthy manufacturing.”



Welcome to the National Printing Bureau.

At the National Printing Bureau, we offer a range of products and information services, including banknotes, the Official Gazette, passports, and more. Since its establishment, the Bureau has continuously advanced manufacturing technologies and delivered precise information, driven by a strong sense of mission to support essential social infrastructure.

Mission of the National Printing Bureau

By reliably providing products and information services, such as Bank of Japan notes, the Official Gazette, and passports that support the societal infrastructure, the National Printing Bureau contributes to development of Japanese economy and stability of people's lives.

The Bureau consistently and reliably manufactures the quantities necessary for the national economy. Additionally, it plays a vital role in providing information necessary for maintaining the public's trust in Bank of Japan notes.



The Bureau is dedicated to the reliable manufacturing of passports, postage stamps, revenue stamps, and certificate stamps, all of which demand a high level of counterfeit resistance. This is achieved through a stringent manufacturing control system.

In addition to preparing Official Gazette manuscripts and printing documents containing information published in the Official Gazette (Particulars to Be Published in the Official Gazette), etc., the Bureau provides products of a highly public nature, such as documents on budgets and settlement accounts.

The National Printing Bureau has a Head Office, a Research Institute, and six plants located throughout Japan.

*Operations related to Public Basic Information Database (an essential infrastructure-related database, hereinafter the “Base Registry”)

Competent ministry: Ministry of Finance, Digital Agency*

Bank of Japan notes — Bank of Japan
Official Gazette — Cabinet Office
Passports — Ministry of Foreign Affairs
Postage stamps — Japan Post

Other government agencies, local governments, etc.

National Printing Bureau

Head Office

Plants

Research Institute

Tokyo Plant

Oji Plant

Odawara Plant

Okayama Plant

Hikone Plant

Shizuoka Plant

With over 150 years of history, the National Printing Bureau has garnered world-renowned technology and trust.

The National Printing Bureau was established in 1871 as the Paper Money Office under the Ministry of Finance. Since then, the Bureau has continued to create infrastructure that supports people's daily life, including banknotes and the Official Gazette.



1868-1912 (Meiji era)

The first postage stamp produced by the Bureau (the prototype of today's regular postage stamps)

1872
Issuance of the Cherry Blossom Stamps



The first domestically manufactured banknote

1877
Issuance of the National Bank Note (new version) 1 yen note



1883
Cabinet Document Bureau inaugurated the first issue of the Official Gazette.



Issuance of the Official Gazette since 1883



Japan's first commemorative postage stamp celebrating the 25th anniversary of the marriage of the Emperor and Empress Meiji

1894
Issuance of the silver wedding commemorative postage stamp to celebrate the Emperor and Empress Meiji



Promulgation of the Constitution of the Empire of Japan

1889
Issuance of an extra edition of the Official Gazette



1912-1926 (Taisho era)

In response to stamp counterfeiting incidents, stamps incorporating anti-counterfeiting technologies, such as watermarks were issued.

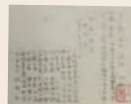
1914
Specification changes of regular postage stamps, known as *Tazawa* stamps



(Transmission Image)

Despite losing the Bureau's plant to the Great Kanto Earthquake, an extra edition of the Official Gazette was urgently issued the next day to announce requisition order.

1923
Issuance of the Official Gazette using handwritten mimeograph printing



1926-1989 (Showa era)

1946-1948
Issuance of the Bank of Japan notes (A series)



1950-1953
Issuance of the Bank of Japan notes (B series)



1957-1969
Issuance of the Bank of Japan notes (C series)



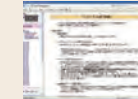
Simultaneous redesign of the 10,000 yen, 5,000 yen, and 1,000 yen notes for the first time

1984
Issuance of the Bank of Japan notes (D series)



1989-2019 (Heisei era)

1999
Launch of the Online Official Gazette Service



2000
Issuance of the Bank of Japan note (D series 2,000 yen note)



2001
Launch of the Official Gazette Information Search Service



2004
Issuance of the Bank of Japan notes (E series)



2019- (Reiwa era)

2020
Issuance of 2020 passport



2025
Issuance of 2025 passport



2024
Issuance of the Bank of Japan notes (F series)



Legal establishment (electronic form) of the Official Gazette



Launch of Base Registry management operations



Post-war banknotes are sometimes referred to as A series, B series, and such!



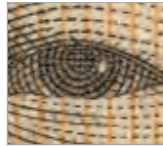
We have deepened trust through a combination of tradition and cutting-edge technology.

Achieving “ART” manufacturing with superior skill and technology

“ART” is the fusion of skill and artistry.

A precise portrait with great master craftsmanship

The portraits featured on banknotes undergo meticulous hand engraving by specialists known as engravers. The lines are so precise that more than ten lines can be engraved within a width of one millimeter. The skill of these engravers shines through in their thoughtful approach to engraving lines expressing nuances in shading and texture.



Uniquely evolved western technologies

The engraving technique was introduced by foreign technicians during the Meiji era and has evolved in its own unique way. The depth, width and direction of the engraved lines create a three-dimensional effect.



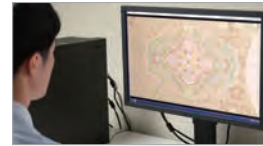
Carrying on the traditional techniques of *washi* (Japanese traditional paper)

“Light-and-shaded watermark” is based on the traditional Japanese paper technique of watermark. This technique has been handed down since the Meiji era and is highly regarded worldwide for its sharpness and delicate shade expression.



Tradition and digital technology merge

The design of the banknote is completed when the Guilloche pattern, generated through a combination of computer-generated data, is seamlessly fused with traditional engraved lines.



The evolution of banknotes aims to prevent counterfeiting and to be user-friendly for everyone. The ultimate craftsmanship, born from the blend of Japanese tradition and cutting-edge technology, can be examined with a piece of banknote in your hands.



Universal design for user-friendly accessibility

The design aims for fair, easy banknote use by many people, regardless of age, nationality, or ability.

Enlarged numerals of the face value

By enlarging the numbers on both sides, the face value becomes more easily understandable.



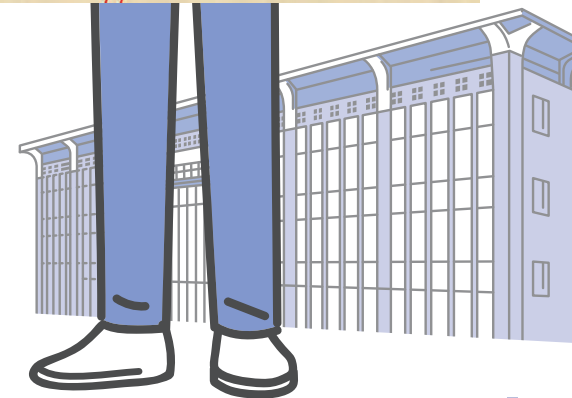
Tactile mark

The tactile mark, shaped with 11 diagonal lines for excellent finger sensitivity, is differently positioned to facilitate easy identification of denominations.

Watermark

Distinctive watermarks, shapes and positions provide a visually differentiating between

each tailored with different for each denomination accessible means of denominations.



Currency recognition app

U-Qui-Ch-kun

*The authenticity verification feature is not available.



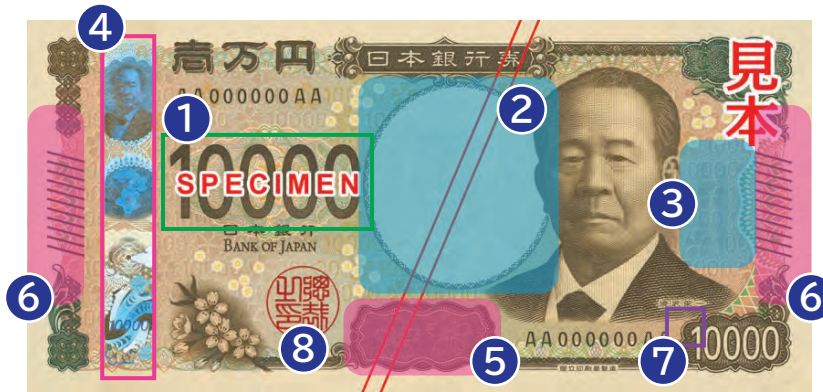
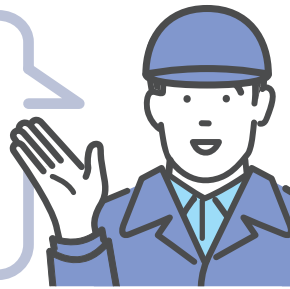
The National Printing Bureau offers a free download of the currency recognition app “U-Qui-Ch-kun” (Universal Quick Checker for Bank of Japan notes) for visually impaired individuals (iOS version, available only in Japan). This app, when pointed at the banknotes with a camera, identifies the denomination and provides the face value through audio and large text.

*iOS is a trademark or registered trademark of Cisco in the United States and other countries or regions and is used under license from Cisco.



We support a society in which people can live without fear, thanks to world-class anti-counterfeiting technologies.

There are numerous cash handling machines in Japan, banknotes are intricately designed considering their suitability for the circulation environment. In addition, banknotes incorporate various anti-counterfeiting technologies, including measurement to prevent counterfeiting through color photocopiers.



1 Intaglio printing

by touch

The main designs on banknotes, including the portrait, are printed using intaglio printing, an ink deposition method that leaves the surface of the banknote rough to the touch. For the denomination numerals, the tactile mark, and other features, a special technique called deep intaglio printing is employed, in which ink is applied thickly to create greater relief.



2 Watermark and high-definition watermark

watermark

In addition to the intricate portrait watermark, finely crafted continuous patterns (high-definition watermark) are applied around the portrait.



3 Watermark-bar-pattern

watermark

When viewed through transparency, vertical rods become visible, with three rods on the 10,000 yen note, two rods on the 5,000 yen note, and one rod on the 1,000 yen note.



4 3Dhologram

by tilting

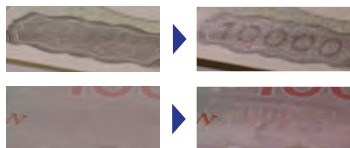
By tilting the banknote left or right, the three-dimensional portrait appears to rotate. This is a world-first application of this technology to banknotes. Other designs also change depending on the viewing angle.



5 Latent image

by tilting

By tilting, the face value numerals, such as "10000" or "5000" appear on the front side, while on the back side, the characters "NIPPON" appears.



6 Pearl ink

by tilting

When tilting, a pink colored sheen emerges at the center of both the left and right ends of the banknote.



7 Microprinting

with tools

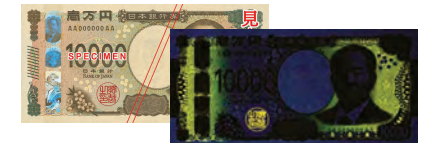
"NIPPONGINKO" is printed in microscript that cannot be reproduced with color photocopiers.



8 Luminescent ink

with tools

When ultraviolet light is shone, the seal on the front (the seal of the Governor of the Bank of Japan), and patterns on both sides become luminescent.



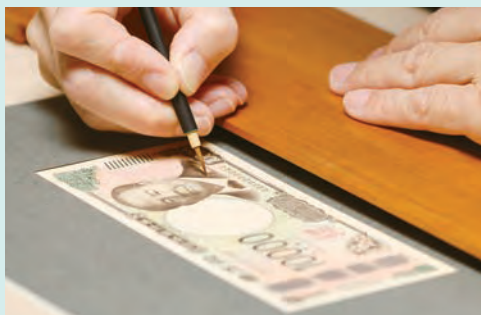


Material manufacturing process

The world-class master craftsmanship is fully showcased with pride.

Original drawings

The National Printing Bureau has specialists known as designers, individuals possessing advanced technical skills and artistic sensibilities, who are involved in the design and engraving process. The designers responsible for design meticulously craft the original drawings (masterpieces) for banknotes using brushes and colored pencils.

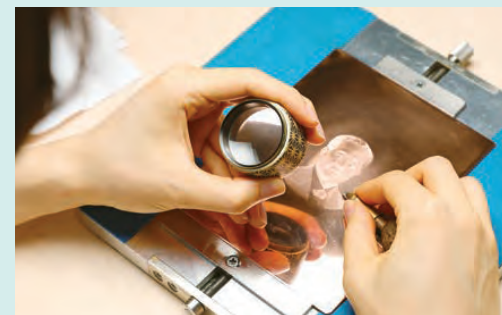


Portrait engraving

Building upon the original drawings, designers utilize a special engraving tool called a *burin* to engrave dots and lines one by one into a metal sheet, creating the master plate.



The superior skill ensures the trust of society.



Digital prepress

The colorful intricate patterns and geometric patterns known as Guilloche on banknotes are designed using the latest computer systems.

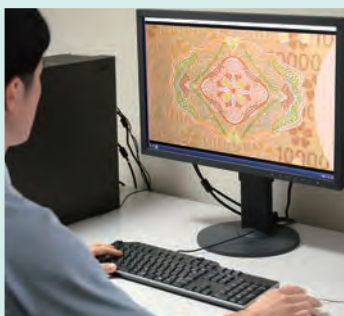
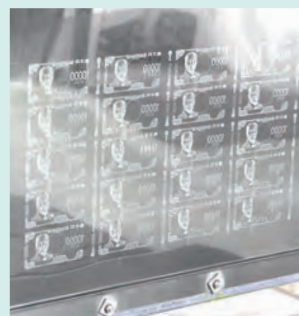


Plate manufacturing

Based on the single master plate engraved by a designer, large multi-faceted printing plates are produced. To enhance printing durability, the plates undergo a chroming process.



Ink manufacturing

Printing inks are produced by blending pigments and vanishes using a uniquely developed formula, ensuring that the inks possess both beautiful, unique colors and outstanding functionality.



Use original inks

Three important aspects for trusted banknotes①



Not to be counterfeited

In addition to technologies that facilitate easy authentication, banknotes are equipped with the most advanced anti-counterfeiting technologies of the time, as counterfeiting has become increasingly sophisticated over the years. The detection rate of counterfeit Japanese banknotes remains low on a global scale.



In Japan, instances of suspicion regarding the use of banknotes for counterfeiting are rare. However, when attempting to use high-denomination banknotes abroad, it is not uncommon to face refusal or thorough scrutiny.



Paper manufacturing

We have established a rare manufacturing system that encompasses the production of materials, paper, and printing, ensuring a consistent process.

Raw materials



The paper for banknotes is made from *mitsumata* (oriental paperbush) and abaca (Manila hemp), and so on. This results in a unique texture and appearance, creates durable and special paper suitable for circulation environments.

Cutting



The raw material for the paper, abaca pulp, is finely shredded by a machine.

Defibering



The pulp fibers are disentangled in a large amount of water.

Cleaning



Foreign matter in the raw materials is removed.



A large amount of water is consumed to make paper!

Grinding



To ensure a strong paper with well-combined fibers, the fibers are then thoroughly ground so that they combine easily.

Mixing



Mixed with chemicals, pulp for paper is made. These processes are controlled by a centralized management system.



Papermaking



As banknotes are used every day, paper for banknotes is designed to be strong!

The pulp is subsequently run over a wire mesh, elaborately watermarked (light-and-shaded watermark), dried and rolled to make paper.

Cutting



The rolled paper is cut into sheets of the right size for printing and sent to the next process of printing.

Three important aspects for trusted banknotes②



User-friendliness for everyone

The design aims for fairly and easily banknote use for many people, regardless of age, nationality or ability. Numerals of face value and tactile marks are easy-to-understand examples. Other elements on banknotes are also carefully designed, such as the color scheme of each denomination is easily recognizable for a diverse range of people. For instance, the "1" on the 10,000 yen note and on the 1,000 yen note are drawn in different character styles.



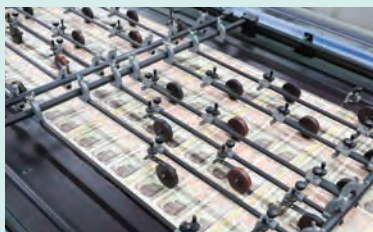
A universal design concept is adopted.



Printing process

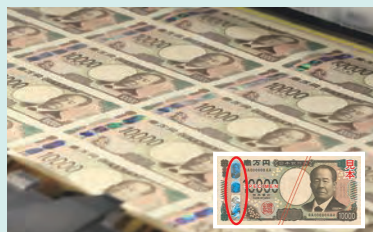
Ensuring strict quality and quantity management of each single note, we infuse every note with a sense of trust and security.

Printing



After plates are set in the printing machine developed by the National Printing Bureau, design patterns are printed on large sheets first for the back and then for the front. The machine's capacity to perform offset printing and intaglio printing simultaneously on a single side allows for the creation of highly accurate and detailed patterns.

Hologram application



Holograms that display different images and colors when tilted are placed.

Serial number printing



After both side patterns have been inspected, the seal on the front and alphanumeric serial numbers are printed.

Cutting



Using a cutting machine, large sheets are precisely cut to predetermined size.



Here is the same size of notes you all have!

Inspection, finishing



All cut notes are individually inspected by a machine, verification counted, banded, and packed in blocks of 1,000.



Finally, notes are completed!

Wrapping



After wrapped with a film, notes are prepared for delivery to the Bank of Japan.

Delivery to the Bank of Japan



In this way, the National Printing Bureau manufactures high-quality and uniform banknotes under a strict management system.

Banknotes are delivered to everyone's hands and can be used with peace of mind, thereby contributing to the stability of society.



Three important aspects for trusted banknotes③

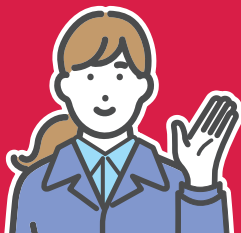


Same quality

If the banknote size of the same denomination were vary or if they couldn't be used in ATMs, it would be difficult to identify genuine notes. Maintaining a high degree of uniformity in banknotes is crucial for instilling confidence in their use.



We strive for high-quality and uniform production!



Please consider taking our plant tours,
online plant tours, or visiting
the Banknote and Postage Stamp Museum.

Information on the National Printing Bureau plant tour

The plant tour includes visit to the manufacturing site, allowing you to learn about banknotes through videos, panel exhibitions, and interactive displays.

Tokyo Plant

2-3-15 Nishigahara,
Kita city, Tokyo
114-0024
+81-3-5567-1102

Tuesdays, Thursdays
10:00, 13:40
(around 90 minutes)



Odawara Plant

6-2-1 Sakawa,
Odawara city, Kanagawa
256-0816
+81-465-49-8225

Tuesdays, Thursdays
9:30, 13:30
(around 90 minutes)



Shizuoka Plant

3-5-1 Kuniyoshida,
Suruga ward,
Shizuoka city, Shizuoka
422-8004

+81-54-265-8055
Tuesdays, Thursdays
10:00, 13:30
(around 90 minutes)



Hikone Plant

1157-1 Higashinonami,
Hikone city, Shiga
522-0027
+81-749-27-6004

Tuesdays, Thursdays
9:30, 13:30
(around 90 minutes)



*Except public holidays and Year-end holidays

- Prior reservations are required, and they can be made either through the Internet or by phone. For telephone reservations, please contact the respective plant between 9:00 and 16:00 on weekdays.
- For the latest information, please check the official website.

National Printing Bureau plant tour



Online plant tour

You can explore the
manufacturing sites and
exhibition rooms of banknotes
and the Official Gazette.



The Banknote and Postage Stamp Museum provides explanations about the history of banknotes and postage stamps, as well as anti-counterfeiting technologies.



Opening hours 9:30-17:00

Closed days Closed on Mondays and year-end holidays
(except National Holidays on Monday, in which case the museum is open on the holiday and closed the following Tuesday instead)

Address 1-6-1 Oji, Kita city, Tokyo 114-0002

Entrance fee Free

National Printing Bureau Banknote and Postage Stamp Museum



TORANOMON ALCEA TOWER
2-2-3 Toranomon, Minato city, Tokyo 105-8445
<https://www.npb.go.jp/en/>
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- Eco-friendly inks and papers are used for printed this material.
- Recycling suitability A: It can be recycled into paper for printing.



2025.7 update