



COMMERCIAL CATALOG





HISTORY OF CASA DA MOEDA DO BRASIL

Founded on March 8, 1694, Casa da Moeda do Brasil is one of Brazil's oldest government institutions. Its activities hark back to the colonial period, having originally being dedicated to reminting Portuguese and Spanish coins in circulation, at a time in which gold mining was very expressive in Brazil and the growth in trade began creating currency disorder due to the lack of local coin supply.

One year after its foundation, minting of the first provincial currency on Brazilian soil was initiated in the city of Salvador, the first headquarters of Casa da Moeda do Brasil. Since then, by means of the production of coins and, much later, notes and other financial and security products, the history of Casa da Moeda do Brasil has blended with the history of Brazil itself. In 1843, the printing of the "Bull's Eye" postage stamp, the first of the Americas and the third in the world, conferred to Brazil a position of note in the history of graphic arts and global philately.

After concentrating its activities in the Northeast of the country and in Minas Gerais, Casa da Moeda do Brasil was definitively transferred to Rio de Janeiro in 1868, to a building especially constructed to house its activities. For over one and a half centuries, the

institution concentrated immense effort on producing national currency on an industrial scale, but the lack of structure and machinery inhibited this. In 1961, the monetary authority of the time launched the first note developed entirely by Casa da Moeda do Brasil: the "cédula do índio", or Indian note, as it was popularly known.

Modernization only occurred in 1965, after the publication of Law n° 4.510, dated December 1, 1964, which reorganized Casa da Moeda do Brasil and legally provided it with the conditions necessary to exclusively manufacture and control values relative to Revenue, Federal Public Debt Securities, national currency and any other securities or values of the Union.

The growth of the Brazilian economy over subsequent years led to the need for an expansion in the company's production capacity. In 1984, Casa da Moeda do Brasil was transferred to a specially designed manufacturing complex in the Santa Cruz Industrial District, in the eastern sector of Rio de Janeiro, the largest and best-equipped graphic and metallurgical security production park in Latin America. The modern facilities occupy a built area of around 110,000 m², set on an area of 500,000 m².

oday, Casa da Moeda do Brasil offers the highest quality standards in terms of the generation of artistic designs and the production of dies by means of modern computerized systems, which operate in a continued and automated work regime.

This work regime interconnects the artistic design and digital assembly sectors in an exclusive network environment independent of the company's corporate system, culminating in the generation of dies for the production of metallurgical and graphic products by means of CTPs (Computer to Plate) specific to graphic products. Thus, complete security and confidentiality of information transferred in this network is guaranteed.

Next, using softwares developed and geared toward document projects, provided under specific restrictions by companies in the international market, the security backgrounds are designed in offset printing (dry and wet), characterized by random design patterns, which can be comprised by micro-letters, for example, that are visible using magnifying glasses.

While still within the product's artistic conception, safety elements that are difficult to reproduce are designed, such as latent images in chalcography (only seen when inclining the document) and offset coinciding registers, which conjugate and synchronize elements on the front and back of the document, forming a unique artistic element.

The dies used in the minting process are generated by laser or CNC machining, directly from graphic designs. For the dry and wet offset, screen printing, flexographic, chalcographic, and rotogravure processes, among others, depending on the type of printing, Casa da Moeda do Brasil also produces dies generated by means of galvanic or laser electroplating, given them a high degree of sophistication and precision, indispensible requisites in the production of security products.

Following these and other modern and trail blazing procedures, Casa da Moeda do Brasil manufactures products that range from notes and coins to certificates and metro tickets, in addition to insignia, badges and postage stamps.

One of Casa da Moeda do Brasil's leading concerns lies in adding value to its products, introducing security elements that allow their authenticity to be identified at several levels. The company provides its clients with vanguard security products, services and solutions, in line with the most modern available in the world. To do so, it has been applying significant investments in the area of IT – Information Technology. Examples of these security elements can be seen in Brazilian passports, documents that are entirely produced and personalized in the Casa da Moeda do Brasil security facilities, with all the information digitalized, providing a guarantee and security to clients and citizens.



TECHNOLOGY AND **SECURITY**

50 REAL NOTES

In December 2010, the Central Bank of Brazil placed the new BRL 100 and BRL 50 notes in circulation, part of the so-called Second Family of the Real, the commercial currency existing in the country.

Casa da Moeda do Brasil played a fundamental role in taking these huge leaps in modernization, thereby guaranteeing preventative measures against falsification and other crimes.

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HIGH RELIEF

Through touch, the relief can be felt on specific areas of the note. For instance:

on the caption "REPÚBLICA FEDERATIVA DO BRASIL" (Federative Republic of Brazil)

and "PACO CENTRAL DO BRASIL"

- and "BANCO CENTRAL DO BRASIL"
 (Central Bank of Brazil);
 on the numbers with the value of the note:
- on the numbers with the value of the note;
 along the sides of the front of the note.



MICROPRINTING

When looking through a magnifying glass, you notice the number 50 that composes some images and the the stripe where "50 REAIS" is written.



WATERMARK

Holding the note up to the light, one notices the figure of a jaguar in the clear area and the number 50 in tones that vary from light to dark.



SECURITY THREAD

to the light, When holding the note up to the light, re of a jaguar in a dark thread near the middle of the note the number 50 is visible, on which "50 REAIS" is written



SECURITY ITEMS

In the following images, the holographic stripe, for example, is now comprised of broken lines that, when moved, present alternating color and image effects.

The hidden number – number with the value of the note – is visible when it is placed in a horizontal position, at eye level, in a well-lit place. The watermark now includes the value of the note and an image of an animal – a jaguar, on the BRL 50 note, and a grouper on the BRL 100 note.

For these changes, Casa da Moeda do Brasil modernized its manufacturing plant and now has production expertise and capacity necessary to offer highly sophisticated notes with optimum security, comprised of elements present in the notes that are considered safer, in circulation in the international market.



PUZZLE

Hold the note up to the light and notice that parts of the design on the back complete those on the front, forming the number 50.



HOLOGRAPHIC STRIPE

When moving the note, one sees the following

- effects on the stripe:
 the number 50 and the word "REAIS" alternate
- the figure of the jaguar becomes colorful; on the sheet a number of colors appear in move



FLUORESCENT ELEMENTS

Under ultraviolet light, the following is visible:

• the number 50 on the front, in the indicated area;

small threads become visible in a lilac color.



HIDDEN NUMBER

When holding the note at eye level in the horizontal position, in a well-lit area, one sees the number 50 appear in the indicated areas.

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PRODUCTIVE PROCESS

The banknote manufacturing plant has an installed capacity to produce around 4.2 billion units per year in three working shifts. The process involves professionals from the areas of production, technique, product engineering and design, with the constant goal of producing with the highest quality, using the most modern resources in the international graphics market.

Thus, a range of security items are incorporated into the banknotes, complicating criminal action in falsification and/or imitation, such as: watermark, magnetic security thread, latent image visible from a specific angle, coinciding register (front/back), chalcographic printing in relief perceivable to touch – characteristic marks aimed at the visually impaired - holography and other such devices.

MODERNITY IN THE PRODUCTION OF NOTES

NEW FAMILY OF REAL NOTES

Responsible for printing Brazilian banknotes, Casa da Moeda do Brasil is charged with the duty of meeting the requests made by the Central Bank of Brazil, the agency responsible for the issuance control of the monetary standard, with quality, promptness and reliability.

Thus, Casa da Moeda do Brazil constantly searches for new technologies, adopting the most modern production processes, aimed not only at quality and aesthetics, but, chiefly, the security and inviolability of its products.

Fruit of this constant concern and commitment to excellence, the New Family of Real Notes is now one of the safest sets in the world. "The new family of Real notes is now one of the safest sets in the world."







MEDALS, COMMEMORATIVE COINS, BADGES AND INSIGNIA

Casa da Moeda do Brasil produces numismatic products, such as coins, medals and insignia, using special finishes and noble metals such as gold, silver and other alloys. Thus, with each day, Casa da Moeda do Brasil further actively establishes itself in the Brazilian cultural context thanks to its unquestionable and expressive representation as an element of culture.

Proof of this lies in the 1977 foundation of the "Clube da Medalha do Brasil" (Medal Club of Brazil), inspired by foreign initiatives, which signaled expressive marks of their respective countries, by means of these small works of art, minted in metal.

Since then, the Clube da Medalha do Brasil has released an average of 10 medals per year, having paid tribute, among many others, to: "200th Anniversary of the Arrival of the Royal Family in Brazil", "100th Anniversary of the Brazilian Academy of Language and Literature", "100th Anniversary of the Birth of Juscelino Kubitschek", "100th Anniversary of the Pinacotheca of São Paulo", "100th Anniversary of Sport Club Internacional", "100th Anniversary of the Birth of Mestre Vitalino", "300th Anniversary of the Death of Zumbi dos Palmares", "350th Anniversary of the Battle of Guararapes", "450th Anniversary of the City of São Paulo", and "50th Anniversary of the Creation of Petrobras".

Each year, the Exonumia Commission, which includes personalities and representatives of institutions linked to culture, meets to select the themes for the objects to be launched, always chosen to evoke values relevant to Brazilian culture or universal interest.

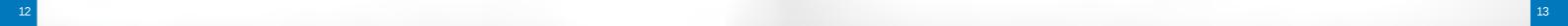
Those involved in the creation include illustrators, engravers, sculptors and artists that design medals in varied shapes and sizes. The bold design of the colored and mirrored pieces is the result of modern techniques and artistic innovation.

PARTNERS

By means of regular releases and with privileges for partners, the Club offers refined collectors pieces in gold, silver and bronze, valued also due to the number of pieces issued being strictly limited.

The members of Clube da Medalha receive newsletters about new releases and a magazine specialized in exonumia, published periodically by the Club. Through their own initiative, they are able to establish contacts among themselves, expanding knowledge on the subject, exchanging information and making new friends.









MODERNITY IN THE PRODUCTION OF COINS

The company's coin manufacturing plant has a For coin minting, horizontal and vertical minting permanent capacity to produce up to four billion coins per year, operating in three work shifts, thereby catering to the entire demand for coins in Brazil's currency.

The coin manufacturing process is comprised of three stages of disc electrotyping, preparation of minting tools, minting of the actual coins and, finally, counting and packaging.

For disc electrotyping, since 1998, Casa da Moeda do Brasil has had a modern plant for copper and bronze alloy coating, with a capacity to meet the demand of the entire country, while also able to cater to occasional orders from abroad.

The minting tools, considered primordial in terms of product security, are also developed at the plant, through the use of modern equipment such as CNC machining and thread and penetration electric discharge machining.

presses are employed, with these also used for bi-metallic coin minting, such as the BRL 1.00 coin. Electronic counters are used to guarantee security and control of production.

At the end of this process are three fully automated counting lines, with the capacity to count/ package up to six denominations (face value) of coins. The numbers obtained in these counters are compared with those registered on the presses, ensuring that the amount produced is effectively delivered to the Central Bank of Brazil.

Casa da Moeda do Brasil also manufactures products in the area of numismatics, such as commemorative coins, coins with special finishes, commemorative medals and insignia, using noble metals such as gold, silver and other alloys, and is also capable of supplying the foreign market.





Brasil, which has been breaking boundaries for over 300 years, has led to a commitment to product excellence, firmly consolidating its brand in the international

Since 1975, it has been catering to markets located in South America (Argentina, Bolivia, Ecuador, Paraguay, Peru, Uruguay, Venezuela and Suriname), Central America (Costa Rica and Haiti), Africa (Angola, Guinea-Bissau, Zaire), also prospecting in other Lusophone counties (Cape Verde, Mozambique, São Tomé and Príncipe and East Timor).

standards.'

education, telecommunications,

metallurgical and laboratory,

among others.



DIGITAL CERTIFICATION

Digital certification is proof that an internet page files, people can also have a digital certificate and includes the security and reliability necessary to conduct a series of practical tasks, such as: maintain the confidentiality of information that is presented on it. It is as though a site has authorization to receive confidential information and is able to maintain this data in a safe manner, even preventing the actual creators of these virtual pages from gaining access to them. This is a form of digital protection, known as cryptography encryption.

"Cryptography" is derived from Greek, meaning "hidden" (kryptós) and "writing" (graphein). In digital medium, encryption algorithms are used, which are mathematic formulas for hiding information.

Based on the range of possibilities for hiding a message, many forms were invented until reaching what is known as an asymmetric encryption algorithm, called a public-key, which allows information to be encrypted using a specific mathematic formula. For the message to return to its original form, another formula is used through this algorithm, called a private-key.

With a digital certificate, which is based on cryptographic technology, in addition to making purchases over the internet, a person may also sign contracts, signature altered in the case of a printed document. It means that, besides internet pages, computers and Public-Key Infrastructure in Brazil.

- Exchanging e-mail messages with the certainty that the sender is trustworthy and the message will arrive safely.
- Conduct banking transactions, with transfers and account payments, with the conviction of legal guarantees.
- Issuance of e-invoicing, with more safety than in the physical manner, also preventing the waste of paper.
- Access exclusive services offered by companies and financial and governmental institutions.

Legal validity further guarantees the reliability of the digital certificate. A good example of this is of an employee with bad intentions that unduly uses information in the system of a company. If the employee's actions are discovered and the access history has a digital certificate, the person may even be arrested. Without digital certification, the maximum penalty would be dismissal.

Casa da Moeda do Brasil is a Certifying Authority able to issue, renew, revoke and manage digital for example. Thus, there is no concern regarding certificates. It includes secure and modern equipphysical travel or the possibility of having one's ment and services, which involve elevated investments, with the intent of attaining excellence in



- 1. Chalcographic printing of a geometric pattern and descriptive text;
- 2. Negative micro-letters, in chalcography;
- 3. Positive micro-letters, in chalcography;
- 4. Printing of variable data with Sicpadata;
- 5. Offset numismatic background;
- 6. Positive micro-letter (offset);
- 7. Printing with optically variable ink;
- 8. Latent image.







TRACKING STAMPS

Another product manufactured by Casa da Moeda do Brasil, of extreme importance to the country, are Revenue Tracking Stamps.

Today, Casa da Moeda do Brasil is the exclusive producer of revenue stamps for the Inland Revenue, Brazil's tax entity. It has been rendering services for over 40 years to one of the entities with the greatest credibility in the country, contributing to control and tracking, in real time, of over one billion items, including cigarettes and alcohol, by means of these stamps.

Around 8 billion stamps are produced each year for the control of these types of products, with 70% of this production aimed at the control of cigarettes.

In order to comply with the security requirements defined by its clients, Casa da Moeda do Brasil designed and developed the Intelligent Tax Stamp. On this piece, besides the existing physical security in the graphic design, further security was added in the form of Information Technology, with the printing of a unique and invisible code on each stamp issued. With this new security item, after its application on packages all its movements can be controlled via tracking.



PASSPORT PRODUCTION

documents for internationally recognized entities, Casa da Moeda do Brasil manufactures National Passports issued by the Federal Police and Ministry of Foreign Relations – MRE.

In 2004, the institution implemented the new Brazilian Passport and also began catering to the international market. The design of this complex set of security elements applied to passports, necessary to meet the demands of regulations established by the International Civil Aviation Organization – ICAO, was made possible thanks to the expertise and determination of Casa da Moeda do Brasil's technicians.

Continuing the tradition of printing highly secure
The current Brazilian passport is manufactured based on substrates non fluorescent and non reactive to chemical products and, in addition to other security elements, includes colored threads reactive to ultraviolet light, a watermark (Brazilian Coat of Arms and the word "BRASIL") and the security thread with the design of the Brazilian flag interwoven with the word "BRASIL".

> Casa da Moeda do Brasil also employs security, offset and chalcographic ink (the last with optic tone variation), laminates that cover the entire surface of the data page, with a design containing distinct effects, thus ensuring protection against falsification and alterations.

SERVICES

tive security solutions with technology to capture all equipment, air conditioning system with precibiometric and biographic data, providing solutions sion specific to IT equipment, which ensures the that encompass hardware, software, as well as the temperature remains constant while correcting envioperationalization of these services in remote locations, along with the development of a system for the storage and handling of data.

a total area of 390 m², with a Vault of 119 m² and a cates are issued. They are modular areas with physi-Certifying Authority of 20 m², including redundancy in aspects of electric energy and air condition- against gases and water and a barrier against the ing, access control with a biometric reader of varied levels, closed circuit TV, early fire warning system, ity and confidentiality of this data.

Casa da Moeda do Brasil offers its clients innova- remote monitoring through real time supervision of ronment humidity.

The Vault houses the services that offer data processing and storage resources on a large scale, and the The Casa da Moeda do Brasil Data Center covers certifying authority, from where the digital certifical protection against fire and breaking-in, sealing spread of humidity, capable of ensuring the reliabil-











DIPLOMAS AND PERSONALIZED DOCUMENTS

The Unified Certificates produced by Casa da Moeda do Brasil also represent an advance with respect to the standardization of birth, marriage and death certificates.

The new paper used in the process includes around 15 security items. Based on this innovation, the control of request, sending and receipt of certificate lots began to be computerized. This measure will prevent fraud and allow for a more effective control of Brazilian civil registers, in addition to combating non-registration, a goal established by the federal government.

Two other security prints that deserve mention are the certificates and diplomas that Casa da Moeda do Brasil produces for a range of institutions.

TELEPHONE CARDS

In 1988, Casa da Moeda do Brasil accepted a challenge: to develop a manufacturing process for telephone cards at the invitation of the Telebrás Center of Research and Development. It was a success. Up to today, Casa da Moeda do Brasil has been very successful in this segment, according to international parameters.

In 2003, a large investment in the manufacturing line breathed a breath of fresh air into production, with the application of resources in cutting-edge technology. Today, the telephone cards produced by Casa da Moeda do Brasil contain a set of inductive cells with pre-recorded information, circuit calls, which after being "read" are "erased" by the reader unit, preventing their reuse once the credit has been used up. This circuit is printed in offset and, later, undergoes sealing, electrotyping, screen printing, art printing and cutting out processes.

MAGNETIZED TICKETING

For the production of magnetized tickets used by metro and bus companies, rotational printers with a rotogravure module are used for printing the magnetic stripe; four dry offset printing modules; eleven modules for INK JET printing; another for the control of magnetic track quality and one codification module.

A special magnetic induction ink is used for printing the magnetic stripe.

Special inks from traditional suppliers are used for offset printing.

Drying of the magnetic induction is achieved in a hot air chamber and the speed of the machines can reach up to 45 m/minute. On average, Casa da Moeda do Brasil has the capacity to produce something around 30,000 sheets per shift, totaling an average of 30 million tickets

POSTAGE STAMPS

The Postage Stamps produced by Casa da Moeda do Brasil are recognized by philatelists the world over, thanks to their cultural value and exceptional artistic taste. In September 2010 in the city of Rio de Janeiro and in partnership with the Brazilian Postal Service, Casa da Moeda do Brasil hosted the 13th Conference of the "Government Postage Stamp Printers' Association", of which it has been a member since 1948.

Now, Casa da Moeda do Brasil has innovated once again with the creation of the first cloth stamp in Latin America, the only one in the world with the application of glowing ink. Idealized by the Department of Product Design and Die Development – DEMAT, the piece was created in commemoration of the 100th anniversary of Corinthians Paulista football club and has been in circulation since September 1, 2010, the date of the clubs anniversary.

Innovation and excellence are constants

within the company. Proof of this lies in the awards Casa da Moeda do Brasil and Empresa Brasileira de Correios e Telégrafos-ECT (Brazilian Post and Telegraph Corporation) have been granted over the years. Both have been equally recognized by both their domestic and international







MODERNITY IN GENERAL GRAPHICS

Fully aware of new market demands, Casa da Moeda do Brasil noted the need to acquire new equipment and to train staff in digitalization and IT services, in addition to providing graphic products, manufactured in offset, chalcography, rotogravure and typography processes. This modernization facilitated the manufacture of the new Brazilian passport for the Federal Police Department – DPF, the card for the National Civil Aviation Agency – ANAC, the nursing card for the Federal Nursing Council – COFEN, the medical card for the Federal Medicine Council – CFM, and several cards for Governmental Ministries. It is also currently acquiring equipment, geared toward the smart card market, which may cater to several segments within the Brazilian market, and it is duplicating its line of log books, which may soon increase the number of clients in the log book segment.

The General Graphics Department – DEGER is adopting the modernization of its equipment as a routine, aimed at remaining updated and offering its range of clients cutting-edge graphic services.





QUALITY

do Brasil's differentiating features. It encompasses all processes and allows efficient interaction among the company's diverse areas.

Certified in 1997 through the ISO 9001 norm, its er" relations. Quality Management System is geared towards the continued improvement of products and services, the enhancement of processes and a reaffirmation of its commitment to customer satisfaction.

A commitment to quality is one of Casa da Moeda Modern technology for quality control of raw materials, materials and products are used in its laboratories, contributing to the qualification and development of its employees and partners and resulting in stronger "Client/Casa da Moeda/Suppli-



Over recent years, Casa da Moeda do Brasil has proven itself an example of sustainable development, thanks to its environmental planning, aligned with the company's strategic planning. While it expanded, diversified and modernized its manufacturing plant, it also took great leaps in its environmental performance.

This advance can be noted in the manufacture of Notes, an area in which Casa da Moeda do Brasil recently made a large and important acquisition of high-tech printing machines. This acquisition, in addition to positioning it in the market as one of the most technologically advanced in the world, also guarantees a significant reduction in the consumption of inks. An enormous advantage, not only economically but environmentally too, as this cutback also results in an expressive reduction in the generation of related waste.

Along with these pieces of equipment, a system was acquired that allows for the reuse of the cleaning solution for the printing plates, which means, in addition to the reuse of a large volume of water, the reuse of the chemical products that make up that specific solution. This represents yet another significant economic and environmental advantage for the company, as the leading non-renewable natural resource (water) will be reused.

Based on practices like these, with the goal of increasing efficiency in the use of raw materials, water and energy, the company has managed to considerably expand its volume of production, but always with the promotion of actions that ensure sustainability and that represent its contribution to the preservation of the environment.





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