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## VISION

Dulico aspires to become the leading enterprise in the field of copper material production and mechanical processing in Vietnam.

## MISSION

Providing high-quality copper materials and mechanical parts.

Recycling and circulating copper materials.

Self-sufficient copper materials for Vietnam.

## CORE VALUES

**Mind:** Working wholeheartedly, responsibly.

**Studious:** Keeping the desire to learn and improve.

**Integrity:** Maintaining integrity.

**Saving:** Using resources sparingly, minimizing waste for society.

**Humanity:** Love and help each other at work.

MANUFACTURING & TRADING DULICO COMPANY LIMITED



Director

**Mr. Nguyen Trong Duy**

### Dear Valued Partners,

Dulico is proud to be a pioneer in localizing and producing brass strips, contributing to proactively supplying raw materials for domestic copper coil enterprises. With our relentless efforts, we will continue to invest in research and development to expand our copper alloy portfolio, while promoting the export of copper components and materials with higher added value to the global market. Thereby, Dulico not only wants to create more jobs but also contribute to bringing foreign currency to the country.

With a strategy focusing on people, quality and a win-win mindset, we look forward to cooperating with our Partners for a common prosperity. We believe that, together, we will achieve greater success and sustainable development.

### Business Philosophy

We build up a solid team of wholeheartedly, responsible and highly disciplined people and a working environment which focuses on fairness, friendliness and everyone has space to grow and develop himself.

Compassion - Wisdom - Integrity - Thrift - Kindness

**DULICO**

COPPER & COPPER ALLOY

4

5

COPPER & COPPER ALLOY

**DULICO**



# ABOUT DULICO

Company name: **MANUFACTURING & TRADING DULICO COMPANY LIMITED**  
 Founded: **1991**  
 Representative: **Mr. Nguyen Trong Duy**  
 Factory investment: **10.000.000 USD**  
 Company capital: **2.100.000 USD**  
 Employee: **120 people (May 2024)**  
 Area: **24.000 m<sup>2</sup>**



Headquarter & Factory 1: Lot A2, CN 7, Tu Liem Industrial Cluster, Nam Tu Liem, Hanoi, Vietnam



Factory 2: Lot 37, Quang Minh Industrial Park, Me Linh, Hanoi, Vietnam

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## WHAT WE DO?

- Casting and rolling of the brass strip, plate and rods.
- Trading other types of brass strips.
- Producing stamping parts OEM & ODM on various metals.
- Producing lock parts: core, body, lock, key, cover, hinge, etc.
- Machining products with CNC lathe technology.



## WHY DULICO?

- Knowhow and long experience in metal processing
- Closed processing from copper scrap to end products
- High-quality products with the appropriate price, fast delivery time.

## CERTIFICATES & ACHIEVEMENTS



## EXPORT

Currently, Dulico brand brass strips products have been exported to **Canada, Japan** and many other countries in the world.



Top 10 key industrial products of Hanoi City 2023

## Affiliated Organizations & Associations



## Main Partner



## COPPER & BRASS STRIPS

### MACHINERY & EQUIPMENT

### QUANTITY

Casting Line - China	3
Surface Milling Line - China	2
Rough & Finish Rolling Line - China	3
Surface Cleaning Line - China	2
Copper Annealing Furnace - China	2
Splitting Line - China	2

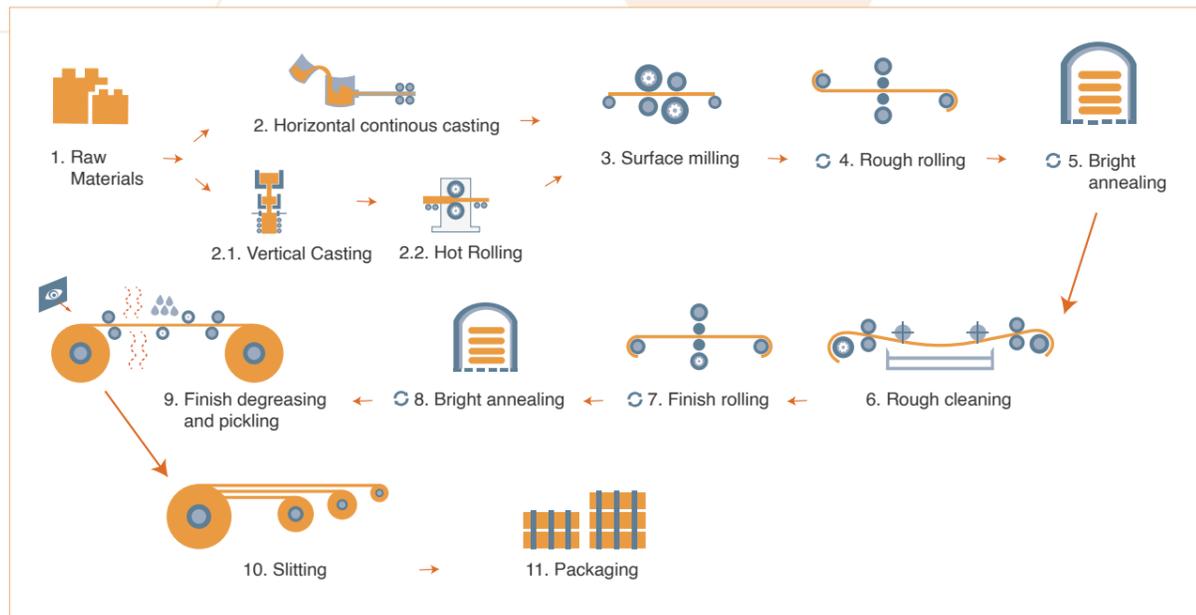
### QC Inspection

Copper Analyzer - Spectro - Germany	1
HV Hardness Analyzer - FUTURE-TECH - Japan	1
HRB Hardness Analyzer - China	1
Caliper - Mitutoyo - Japan	30
Roughness Analyzer - Mitutoyo - Japan	1
Panme - Mitutoyo - Japan	10
Automatic Copper Strip Thickness Gauge - China	2

## MACHINERY & EQUIPMENT



## PRODUCTION PROCESS



## PRODUCT - BRASS STRIPS



## BRASS STRIPS

Brass strips have common properties of good electrical and thermal conductivity, ductility, and high durability. Dulico's brass strip is also produced through a strict quality control process. This ensures that the product always has straightness, accurate thickness tolerance, uniform hardness, and clean, bright surface quality.

### APPLICATIONS

- Household electricity
- Industrial electricity
- Electronics
- Automobiles
- Construction materials

### QUALITY CERTIFICATE



### Standards of DULICO's Brass strips

Alloy code	Chemical composition (%)							Size	
	Cu	Pb	Fe	Al	Zn	Rest	Hardness (H)	Thickness	Width
C2801	59 ÷ 62	≤0.1	≤0.07	≤0.05	Remain	<0.3	O;H/4;H/2;H	0.2-10mm	6-450mm
C2720	62 ÷ 64	≤0.05	≤0.05	≤0.07	Remain	<0.3	O;H/4;H/2;H		
C2680	64 ÷ 68	≤0.05	≤0.05	≤0.05	Remain	<0.3	O;H/4;H/2;H;EH;SH		
C2600	68.5 ÷ 71.5	≤0.05	≤0.05	≤0.05	Remain	<0.3	O;H/4;H/2;H;EH;SH		
C2400	78.5 ÷ 81.5	≤0.05	≤0.05	≤0.05	Remain	<0.3	O;H/4;H/2;H;EH;SH		

**Mechanical properties**

Alloy code	Temper	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)	Bending angle	Vickers Hardness (HV)
C2801	O	≥325	≥35	180°	-
	1/4H	355-440	≥25	180°	85-145
	1/2H	410-490	≥15	180°	105-160
	H	≥470	-	90°	≥130
C2720	O	≥275	≥40	180°	-
	1/4H	325-410	≥35	180°	75-125
	1/2H	355-440	≥28	180°	85-145
	H	≥410	-	180°	≥105
C2680	O	≥275	≥35	180°	-
	1/4H	325-410	≥30	180°	75-125
	1/2H	355-440	≥28	180° or W	85-145
	3/4H	375-490	≥10	180° or W	95-165
	H	410-540	-	180° or W	105-175
	EH	520-620	-	-	145-195
	SH	570-670	-	-	165-215
C2600	O	≥275	≥35	180°	-
	1/4H	325-420	≥30	180°	75-125
	1/2H	355-450	≥23	180° or W	85-145
	3/4H	375-490	≥10	180° or W	95-160
	H	410-540	-	180° or W	105-175
	EH	520-620	-	-	145-195
	SH	570-670	-	-	165-215
	C2400	O	≥255	≥44	180°
1/4H		295-375	≥30	180°	-
1/2H		325-400	≥25	180°	-
H		≥375	-	180°	-



**COPPER STRIPS**

Copper strips is copper containing at least 99.90% copper.

**PROPERTIES**

Copper strip is easy to process, weld, plate and has high anti-corrosion. In addition to outstanding properties such as high stability, excellent electrical conductivity, Dulico's copper products are also produced through a strict quality control process to ensure the indexes of thickness, uniform hardness, smooth surface, flat copper strip, no warping or sagging.

**APPLICATIONS**

Copper strip is widely used in many different industries, especially in the electrical and electronics industry.

**Standards of DULICO's Copper strips**

Alloy code	Chemical composition (%)							Size	
	Cu	Pb	Fe	Ni	P	Remain	Hardness (H)	Thickness	Width
C1020 - OFC	≥99.97	-	-	-	-	-	O;H/4;H/2;H;EH;SH	0.2-10mm	6-450mm
C1100 - TPC	≥99.90	-	-	-	-	-	O;H/4;H/2;H;EH;SH		
C1201 - PDC	≥99.90	-	-	-	-	≤0.004 - 0.014	-		
C1220 - PDC	≥99.90	-	-	-	-	≤0.015 - 0.04	O;H/4;H/2;H;EH;SH		

**Mechanical properties**

Alloy code	Temper	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)	Bending angle	Vickers Hardness (HV)
C1020	O	≥195	≥20	180°	-
	1/4H	215-285	≥15	180°	55-100
	1/2H	235-315	≥10	180°	75-120
	H	≥275	-	90°	≥80
C1100	O	≥195	≥20	180°	-
	1/4H	215-285	≥15	180°	55-100
	1/2H	235-315	≥10	180°	75-120
	H	≥275	-	180°	≥80
C1201 C1220	O	≥195	≥20	180°	-
	1/4H	215-285	≥15	180°	55-100
	1/2H	235-315	≥10	180°	75-120
	H	≥275	-	180°	≥80

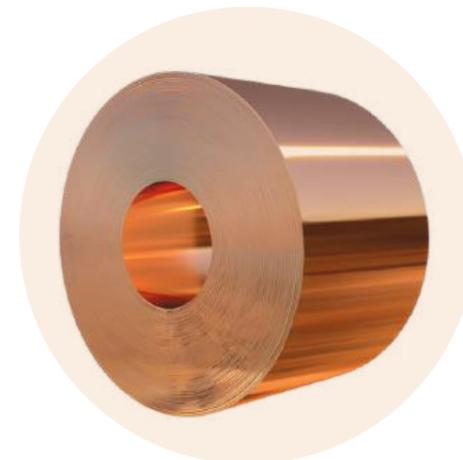
### QUALITY MANAGEMENT

The goal of the quality control process at DULICO is to ensure that no defective products reach the customers. We comply with ISO 9001 standards for quality management, from the assessment and screening of input materials to the production stages. Copper in the furnace is analyzed by German Spectro spectrometer; thickness tolerance is checked by modern AGC thickness gauge; hardness is measured by Japanese HV analyzer; copper surface and color fastness are strictly controlled by roughness analyzer and salt spray equipment.

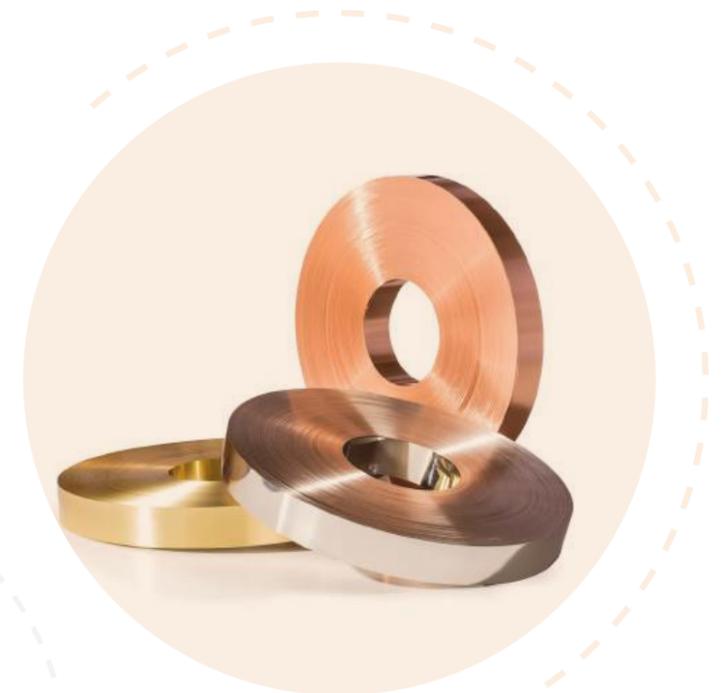
#### Quality management equipment



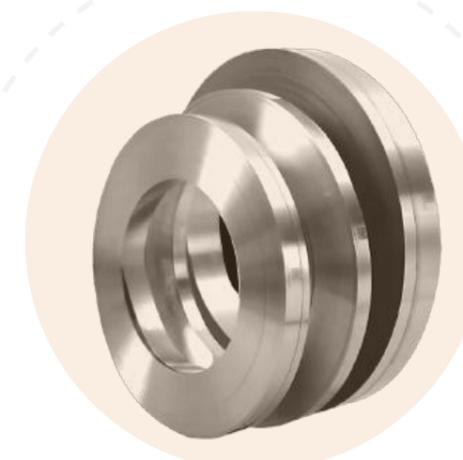
## COMMERCIALS PRODUCTS



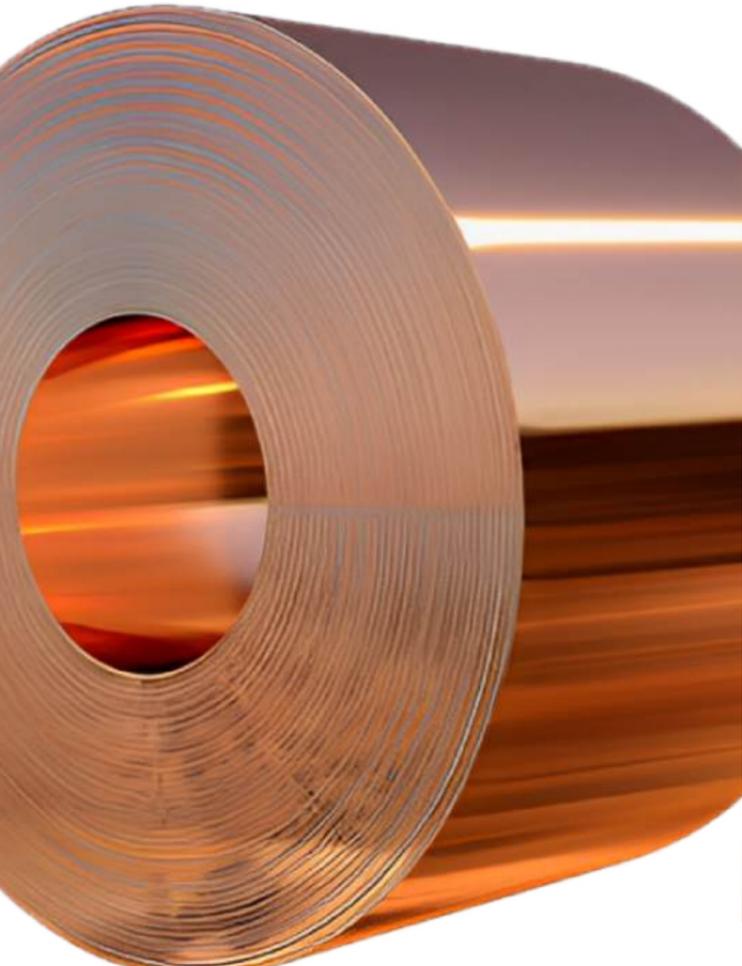
TIN PHOSPHOR BRONZE STRIP



LEAD FRAME STRIP



NICKEL SILVER STRIP



## TIN PHOSPHOR BRONZE STRIP

Tin phosphor bronze strip is an alloy of copper containing phosphorus, tin and copper.

### PROPERTIES

Tin phosphor bronze strip has excellent machinability, high strength, high elasticity and superior corrosion resistance compared to other copper alloys.

### APPLICATIONS

Tin phosphor bronze strip is widely used in personal computers, telephones, and household electrical appliances.



#### Standards of Tin phosphor bronze strip

Alloy code	Chemical composition (%)								Size	
	Cu	Sn	Fe	Ni	P	Zn	Others	Hardness (H)	Thickness	Width
C5191	93.5	6.5	-	-	0.03 - 0.35	-	Cu+Sn+P ≥99.5	H/4;H/2;H	0.10-3.00mm	20-600mm
C5210	92	8	-	-	0.03 - 0.35	-	Cu+Sn+P ≥99.5	H/4;H/2;H		
C5071	98	2	-	-	≤0.15	-	Cu+Sn+P ≥99.5	H/4;H/2;H		
C5111	95.1 - 96.5	3.5 - 4.9	-	-	0.03 - 0.35	-	Cu+Sn+P ≥99.5	H/4;H/2;H		
C41120	91	0.8	0.15	-	-	Remain	Zn	H/2;3/4H		
C44500	72-75	0.5-1.2	-	-	-	Remain	Zn	1/2H;3/4H;H;EH;SH		



## NICKEL SILVER STRIP

Nickel silver strip is an alloy containing copper, zinc and nickel.

### PROPERTIES

In addition to the common properties of copper such as electrical conductivity, thermal conductivity, and high ductility, nickel silver strip also has good anti-corrosion, mechanical properties, antibacterial properties, and good radiation protection.

### APPLICATIONS

Nickel silver strip is widely used in applications such as internal shielding in mobile phones or in crystal oscillators. Nickel silver strips are often used to form conductive shields around circuit boards, chips and antennas, preventing interference from external sources and ensuring the correct operation of communication systems.

#### Standards of Nickel silver strip

Alloy code	Chemical composition (%)							Size	
	Cu	Pb	Fe	Zn	Ni+Co	Mn	Hardness (H)	Thickness	Width
C7701	54.0 - 58.0	≤0.03	≤0.25	Remain	16.5 - 19.5	≤0.50	O;H/4;H/2;H;EH;SH	0.15-3.00mm	20-400mm
C7521	62.0 - 66.0	≤0.03	≤0.25	Remain	16.5 - 19.5	≤0.50	O;H/4;H/2;H;EH;SH		
C7351	70.0 - 75.0	≤0.03	≤0.25	Remain	16.5 - 19.5	≤0.50	O;H/4;H/2;H;EH;SH		

# LEAD FRAME STRIP

## BASIC PROPERTIES

Copper lead frames is a copper alloy with many outstanding advantages in terms of electrical conductivity, mechanical strength, machinability, corrosion resistance and thermal stability.

## APPLICATIONS

Copper lead frames are widely used in the electronics and electrical industries, especially in the production of lead frames and integrated circuit components.



### Standards of Lead frame strip

Alloy code	Chemical composition (%)						
	Pb	Fe	Sn	Zn	P	Cu	Hardness (H)
C1921	-	0.05-0.15	-	-	0.015-0.050	Remain	O; H/2; H
C1940	≤ 0.03	2.1-2.6	-	0.05-0.20	0.015-0.150	Remain	O; H/2; H; EH; SH

# MECHANICAL PROCESSING

## MACHINERY & EQUIPMENT

## QUANTITY

### Stamping

Stamping machine from 10 – 160 T - Czechoslovakia/Japan	30
Stamping machine 260 T with automatic feeder - Chinfong - Taiwan	1
Stamping machine 110 T with automatic feeder - Komatsu - Japan	1
Stamping machine 60 T with automatic feeder - Komatsu - Japan	1
Stamping machine 80 T with automatic feeder - Komatsu - Japan	2

### Surface Treatment

Sanding and Felt Polishing Machine	10
Automatic Hinge Polishing Machine	2
Water Abrasive Surface Treatment Machine	3

### CNC

CNC Lathering - Taiwan/China	7
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### Mold

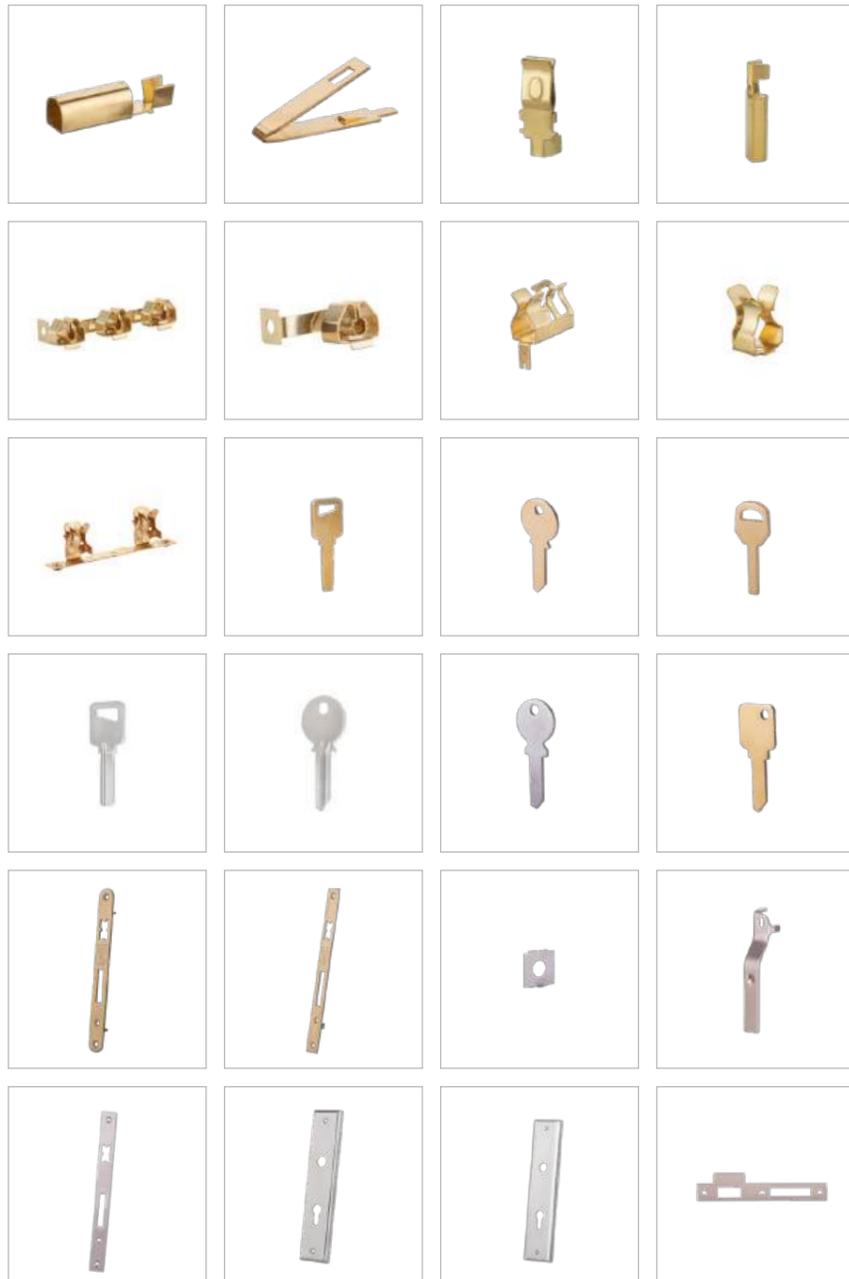
Mechanical lathe - Japan	2
Mechanical milling machine - Japan	3
Mechanical surface grinder - Japan	3
Wire cutting machine - China/Japan	3

### QC inspection

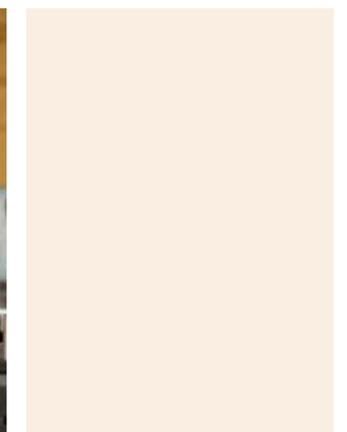
Caliper - Mitutoyo - Japan	30
Panme - Mitutoyo - Japan	10
2D measuring machine	1
Salt spray machine - China	1

# STAMPING

With the proactive source of brass strips materials, Dulico has a huge advantage in the stamping and punching of copper parts. In addition, Dulico also stamps on different materials, based on the drawings and requirements of customers.

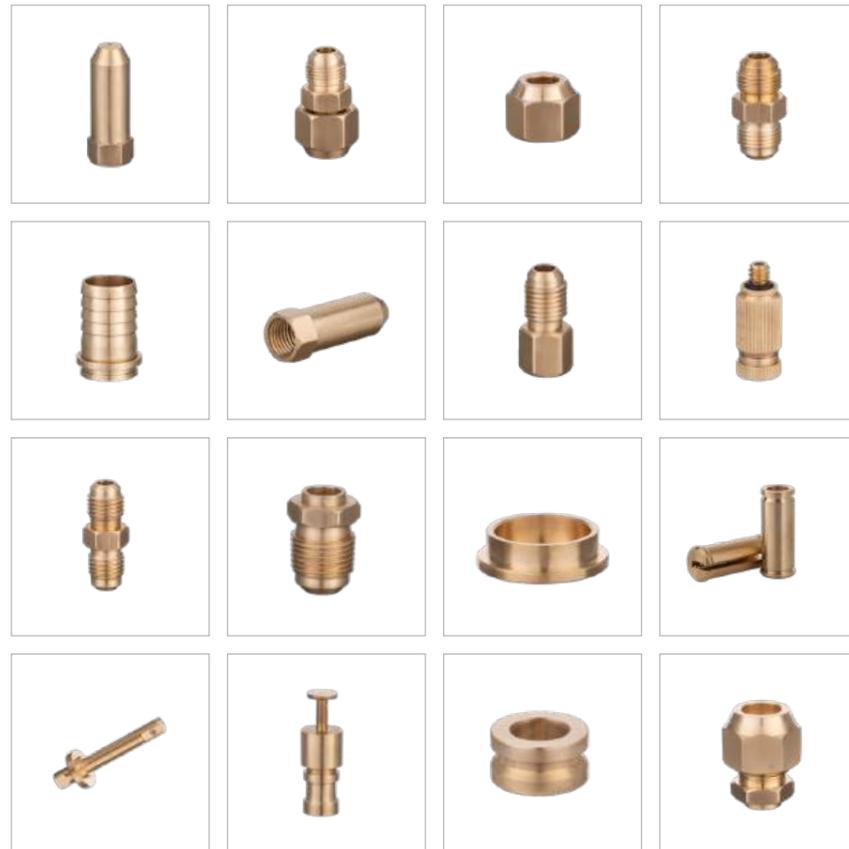


# IMAGES MACHINERY & FACTORY



## COPPER & BRASS FITTINGS

From the source of copper material cast at the factory, Dulico directly processes CNC lathes at competitive costs. Dulico's copper parts have conquered customers in the Japanese market.



## HINGE

Dulico specializes in manufacturing door hinges made of steel, stainless steel, and copper. As a long-term partner of famous lock and door brands in Vietnam, we produce a variety of different hinges.

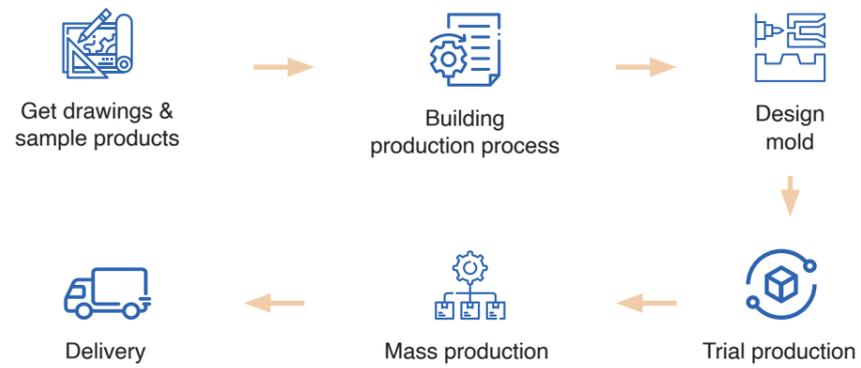


## QUALITY MANAGEMENT

The goal of the quality control process is to ensure that no defective products reach the customer. Dulico complies with ISO 9001 standards for quality management. Input materials from suppliers are carefully evaluated and screened. Dulico strictly controls all stages of the production process and controls the final product.



## PRODUCTION AND ORDERING PROCESS





Thank you for your interest and trust in Dulico.  
We hope to have the opportunity to cooperate with you in the future.

**DULICO**



**DULICO MANUFACTURING & TRADING CO. LTD**

Headquarter & Factory 1: Lot A2, CN 7, Tu Liem Industrial Cluster, Nam Tu Liem, Hanoi, Vietnam

Factory 2: Lot 37, Quang Minh Industrial Park, Me Linh, Hanoi, Vietnam

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