



Company Profile

鑫賀科技股份有限公司
EVERFLOW TECHNOLOGY CO., LTD

— Thermal Solution Provider

Jan. 2024

Company Profile



Customization Orientation
Integrity、 Pragmatic

HQ in Taipei:

Everflow Technology Co., Ltd
(5F., No.2, Ln.106, No. 102, Wugong 3rd Rd., Wugu Dist., New Taipei City, Taiwan(R.O.C))

Factory in CH:

Everflow Precision Electronic (DongGuan) Co., LTD
Dongguan HanShuo Plastic Co., Ltd
(Gekeng Yanjiang Industrial Zone, Heng Li Town, Dongguan City, Guang Dong, China)

COMPANY PROFILE

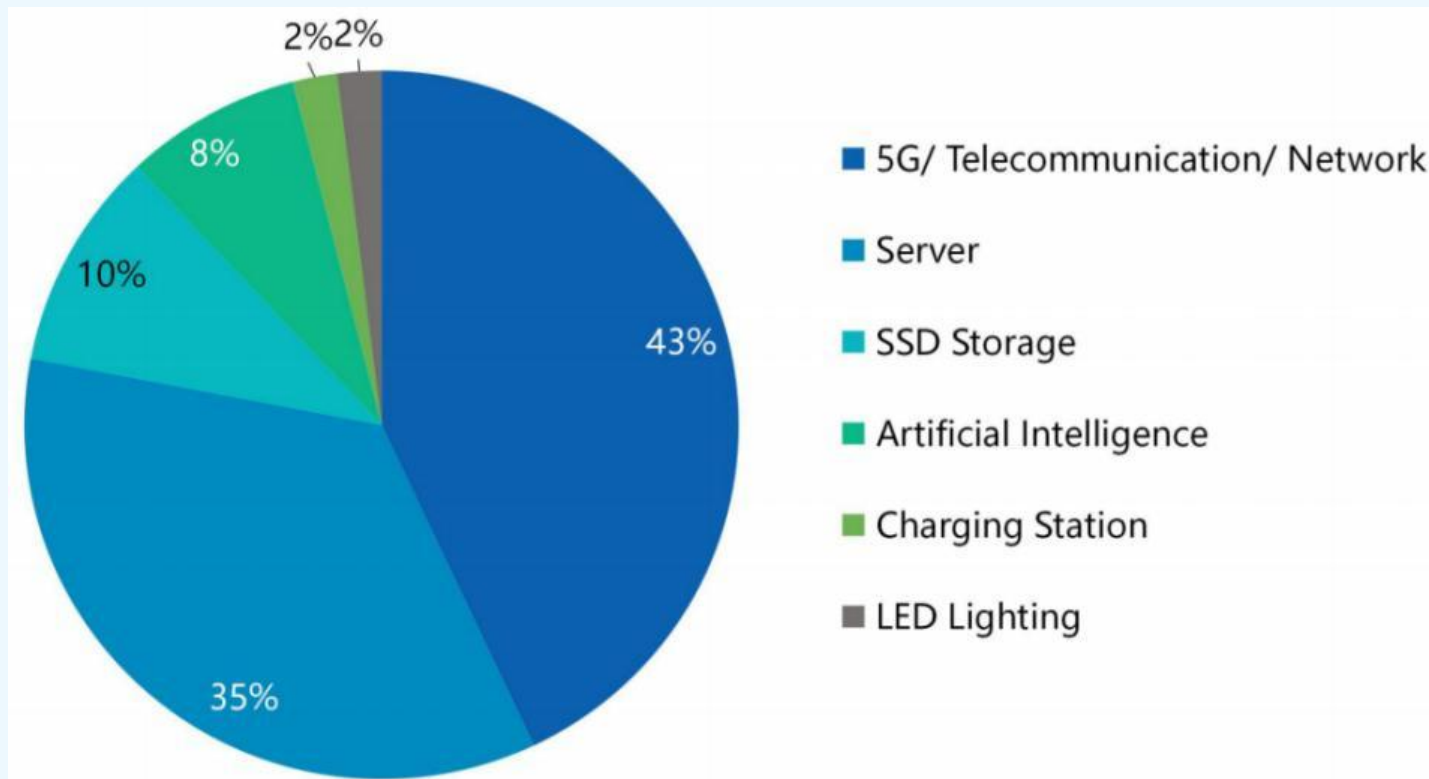
Everflow Technology Co., Ltd(Abbreviation: EF) :

Established in Dongguan in 1999, is a Taiwan-funded enterprise integrating R&D, production, sales and providing professional cooling fans and thermal modules. The products include cooling fans, thermal modules, and water-cooling systems etc.EF headquartered in Taipei, has numerous manufacturing locations in Dongguan and Xiamen, and has sales outlets and offices in North China, South China, and Southwest China; EF has passed ISO9001, ISO14001 and IATF16949 management system certification, and products are sold to international markets in Europe, America, Asia, etc.

Major historical events

- 1999: EF (Dongguan Factory) established, manufacturing computer related brushless motors, fans;
- 2003: EF factory moved to Hengli Town, Dongguan, passed ISO9001:2000 in April;
- 2006: Put into the development and production of water-cooled PUMP;
Passed ISO14001 certification in June;
- 2008: Established SMT;
- 2013: Established heat transfer division;
Invested in the development and production of profiles and heat pipe cooling products;
- 2017: Obtained IATF16949 certification for vehicles;
- 2020: Established CNC, start the research and development of water cooling plate,
Provide water cooling and air cooling solutions;
- 2022: Set up an East China office (one person each for business, RD and FAE);
- 2023: Entirely automated the fan process

Product Application (Thermal)



Main Customer of Application



Main Customer of Application



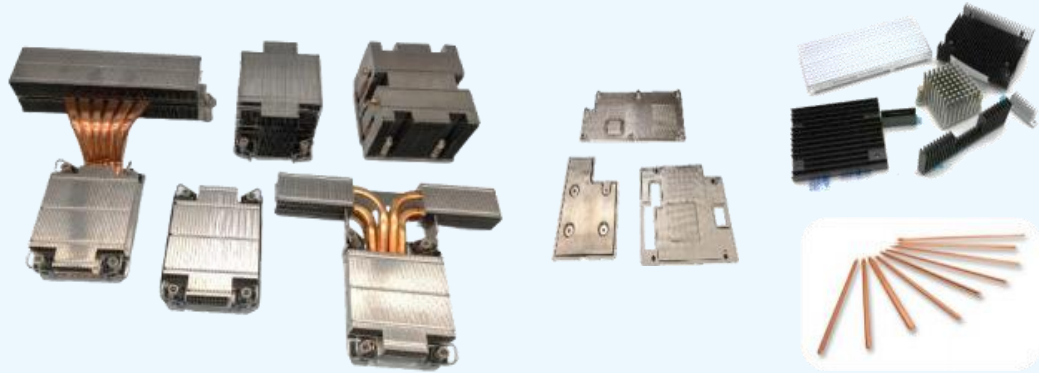
Product Portfolio

Heat Sinks

- Extrusion
- Die Casting
- Forging
- Stacked Fin
- Skived Fin

Cooling Modules

- Heat Pipe Cooling Modules
- Vapor Chamber Cooling Modules
- Thermosiphon
- Cold Plate For Liquid Cooling



Mechanical Parts

Stiffener/ Bolster / Back Plate



Cosmetic Components

Various decorative panels / strips
Media Player / Monitors shells
Handles



Air Cooling Popular Thermal Cooling Solution



CPU



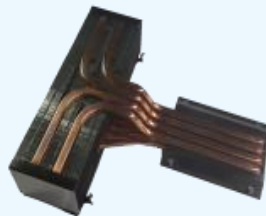
GPU



Edge



Base Station



Switch

Liquid Cooling Cold Plate Excellent Thermal Dissipation Solution



CPU / GPU



**Cold Plate Assembly
For System Solution**



DIMM / OCP



PSU/ SSD

Technical Support

○ New material & technology development

- VC Lid study
- 3D VC solution study with VC+HP and VC+VC.
- Immersion Cooling solution study

○ High power solution study

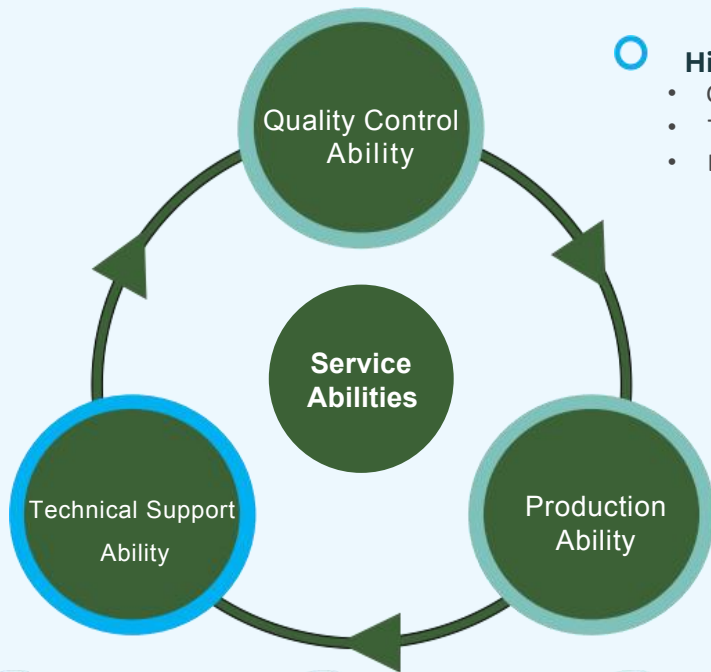
- Composite Design
- Thermosiphon
- Liquid Cooling



○ Cooling module design ability

- HP and VC fine tune ability
- Thermal module design and simulation ability

Heat pipe			Vapor Chamber
D4/D5/D6/D8/D10	Diameter (mm)	Length (mm)	380
60~600	Length (mm)	Width (mm)	380
$0.4 \leq T$	Thickness (mm)		$T \geq 2.7$
Mesh/Powder/Composite	Wick Structure		Mesh/Powder/Composite
5 ~ 80	Qmax of Component (W/unit)		150 ~ 1000



Project Develop Process Flow

Evaluation

- Quotation
 - Design and Simulation
- Proposal

Design Finalized

- Final 2D and 3D design confirmed.

NPI and MP

New Inquiry To Taipei

- 2D 3D RFQ
- Design Proposal request

Mock UP Sample

Start Tooling



Customer
WISEFULL

Production Ability

Tooling Dev.

- Extrusion
- Die casting
- Stamping
- Forging
- Fixture / Jig
- Automation

Mechanical Processes

- Cutting
- Stamping
- Bending
- Drilling/ Tapping
- CNC/ Lathe
- Diamond Cutting
- Friction Stir Welding
- Diffusion Welding
- Laser Welding
- Sintering

Inspection

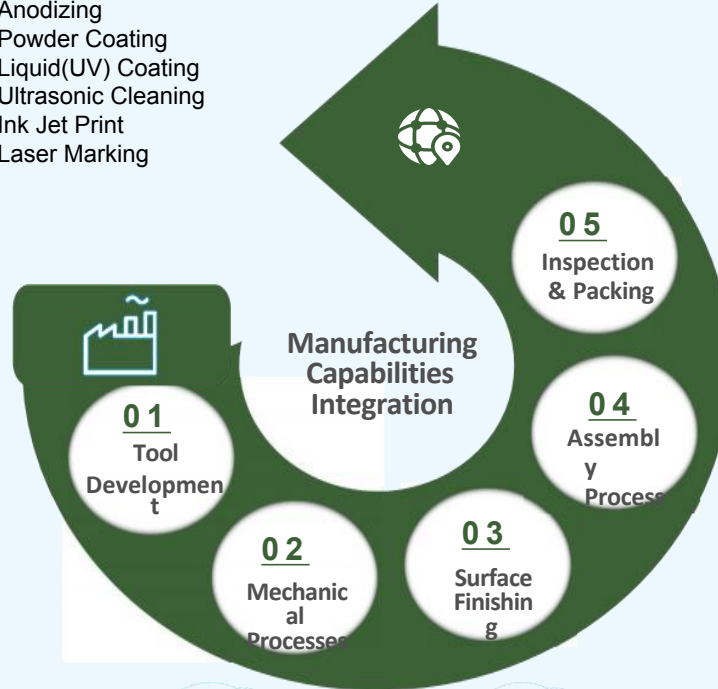
- Thermal Test
- Leakage Test
- Mechanical Check
- Packaging

Surface Finishing

- Chromate Conversion Coating
- Brushing/ Polishing
- Bead Blasting
- Silkscreen/ Pad print
- Anodizing
- Powder Coating
- Liquid(UV) Coating
- Ultrasonic Cleaning
- Ink Jet Print
- Laser Marking

Assembly

- Module Soldering
- Cold Plate Brazing
- Mechanical Assembly



Soldering & Brazing Ability



Reflow
Machine



Diffusion
Bonding
Furnace



Diffusion Bonding
Continuous Furnace



Vacuum Brazing



Continuous Furnace
Brazing



Friction Stir We
lding

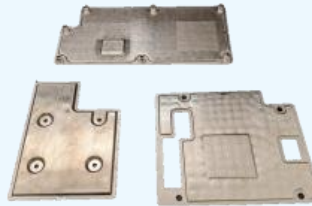
✓ Soldering

- Thermal Module
- Vapor Chamber Module



✓ Diffusion Bonding

- Vapor Chamber



✓ Brazing

- Cold Plate
- Thermosyphon
- 3D VC



✓ FSW

- Cold Plate



Manufacturing Equipment



Cutting

Manual
5<L<2000 mm
W<300 mm
H<120 mm

Auto
20<L<450mm
W<435mm
H<320mm

Speci
fic

Cutti
ng

Diameter<50mm
90



Ditch Cutting

Manual
3<L<500mm
W<200mm
H<60mm
D<65mm

Auto
L<2000mm
W<200mm
H<50mm
D<70mm

32



Stamping

Spec : 5~250T
Working area
L : 400~2700 mm
W: 220~920mm
H < 550mm

Diameter<50mm
90



Drilling

Uniaxial
Multi-axial
High Speed

Working area
Φ1mm~Φ13mm
Accuracy ± 0.2 mm

112



Tapping

Uniaxial: M1.3~M8.0
Biaxial: M2.0~M5.0
Multi-axis: M2.0~M5.0

74



CNC

4-axis machine (Qty.) : 84
1500*450mm (Qty.) : 30
2500*450mm (Qty.) : 13
4500*450mm (Qty.) : 10

298

Manufacturing Equipment



Lathe

12

Working area

Diameter
<540mm



Diamond Cutting

15

Working area

L<2100mm
W<1500mm
H<400mm



Grinding

198

Working area

L<2000mm
W<600mm
H<400mm



Bead blasting

23

Working area

L<5000mm
W<1300mm
H<700mm



Anodizing

10

Working area

L<2600mm
W<600mm
H<1200mm



Coating

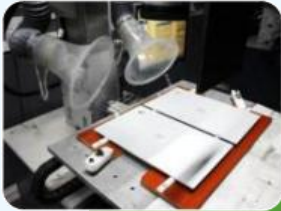
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Powder Coating
Liquid Coating
UV oven

Working area
L<1800mm
W<700mm

Max loading weight: 10kg

Manufacturing Equipment



Laser Marking

28

Working area

L<3000mm

W<1000mm

H<1500mm



Printing

20

Silkscreen

L<1200mm

H<800mm

Ink Jet Printing

1.2mm<H<12mm

Pad Print

800*600mm



Friction Stir Welding

1

Working area

L<1000mm, W<500mm, H<10mm

Material :

ADC12+AL, AL+AL, Cu+Cu, Depth
<6mm)



Soldering

5

W<600mm

H<250mm

T <400°C



Relief Grinder

2

Working area

L<1500mm

W<300/ 680 mm

H: Aluminum 1~150mm; Copper



Brazing

2

W=800mm*H=250mm

Speed:200-1000mm/Min

T: +/-3°C

O2: <500ppm



Heat Pipe rolling machine

2

Automated, High Power waters, Heat pipe direct
contact cooling module



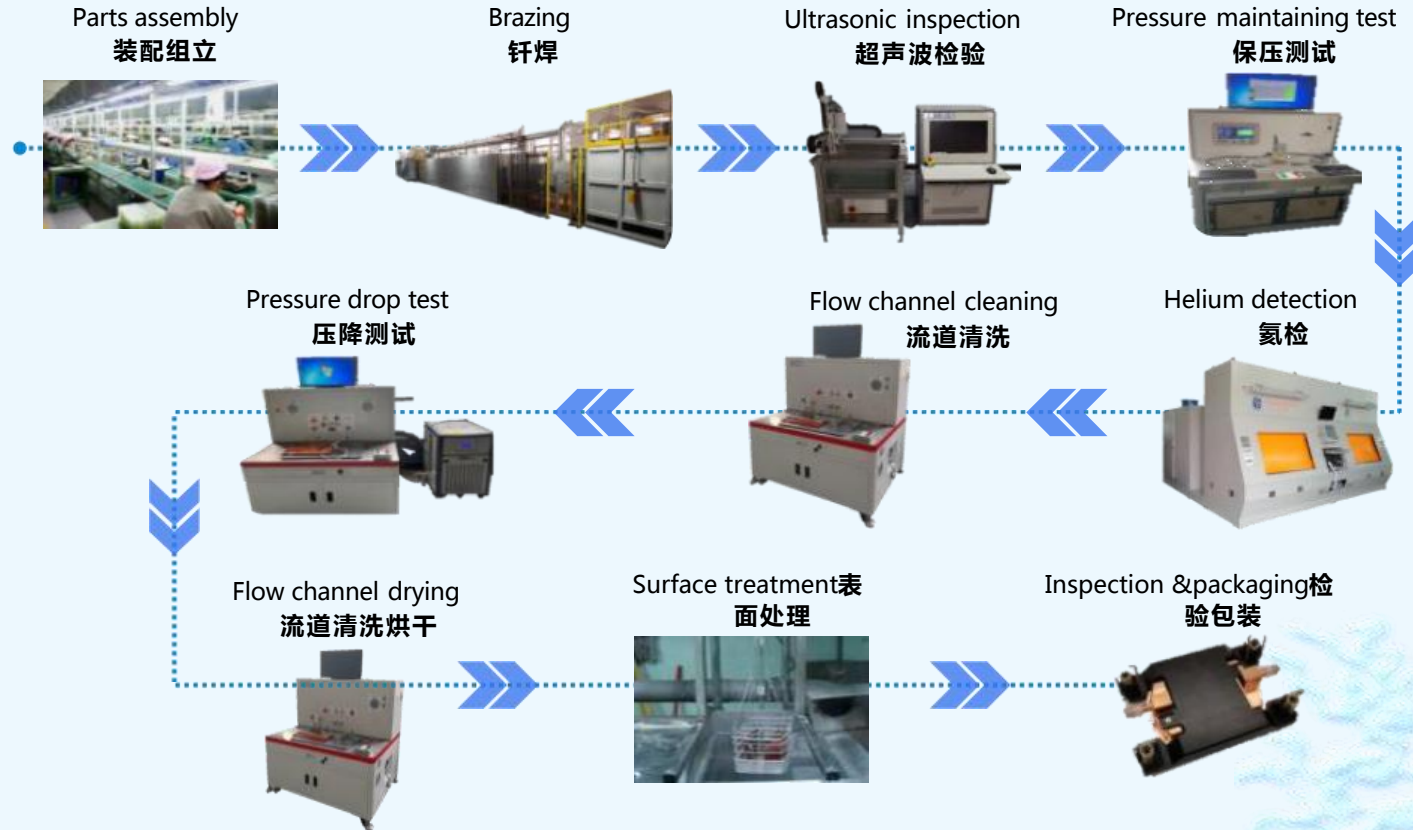
Automatic hot melt machine

2

Hot melt,

Fixed plastic socket

Liquid Cooling Cold Plate --Manufacturing Equipment



Heat Pipe -- Manufacturing Equipment

Cut the tube
切管



Shrink head
缩头



Cleaning
清洗



Fill with powder
填粉



S inter
烧结



Pressure tubes
压管



Elbow
弯管



Degassing/solder joints
除气/焊头



Affusion
注水



Weld tail
焊尾



Bake aging
烘烤老化



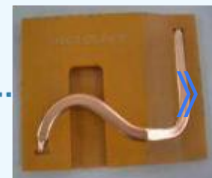
Performance testing
性能测试



Surface treatment
表面处理



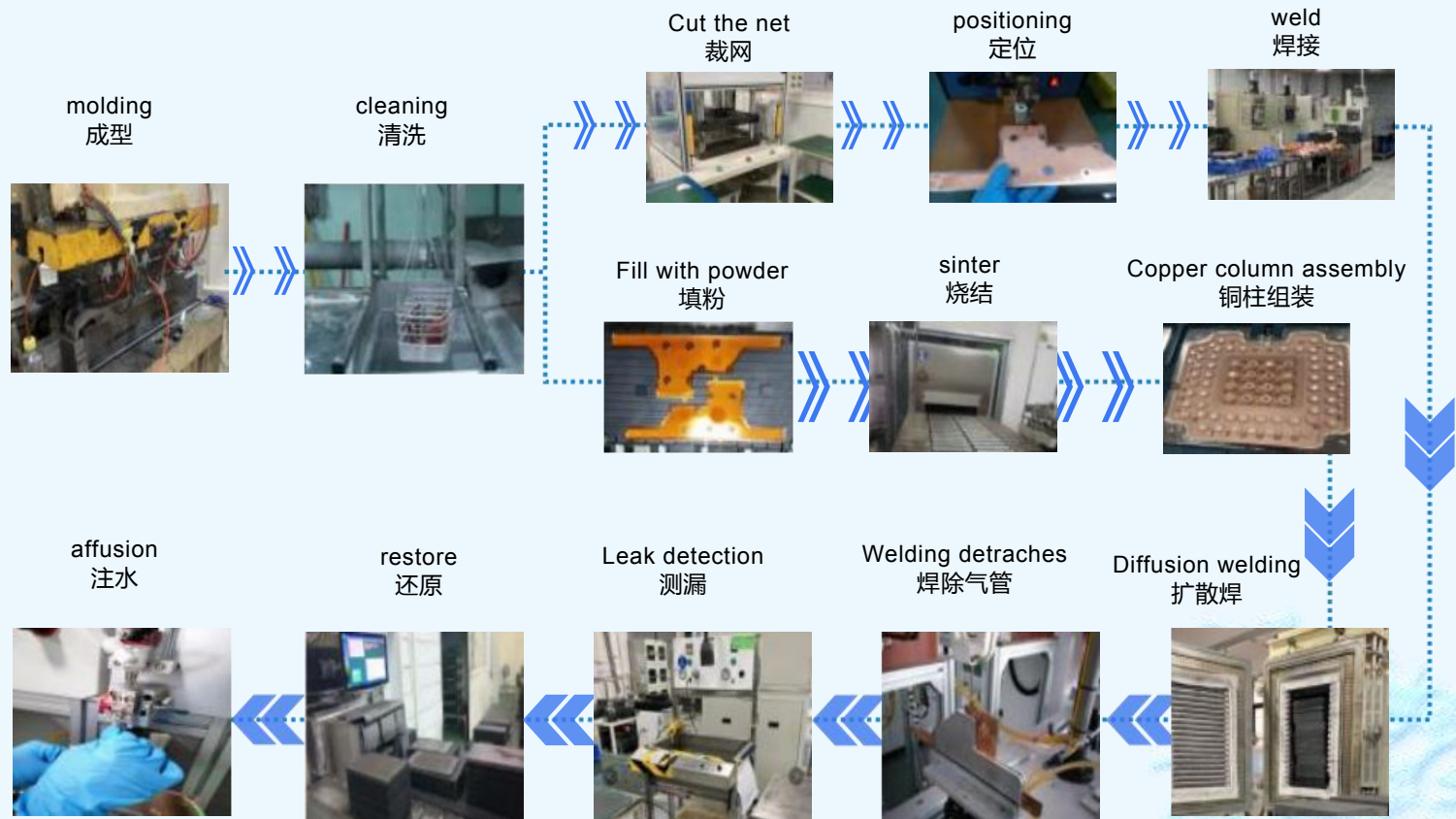
Dimensional inspection
尺寸检验



Wrap
包装



Vapor Chamber Manufacturing Equipment



Vapor Chamber Manufacturing Equipment

Vacuum degassing
真空除气



Welding head
焊头



Trim the edges
裁边



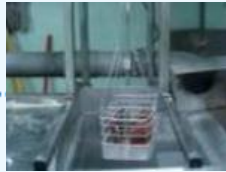
plastic
整形



Aging under pressure
加压老化



Surface treatment
表面处理



Power testing
功率测试



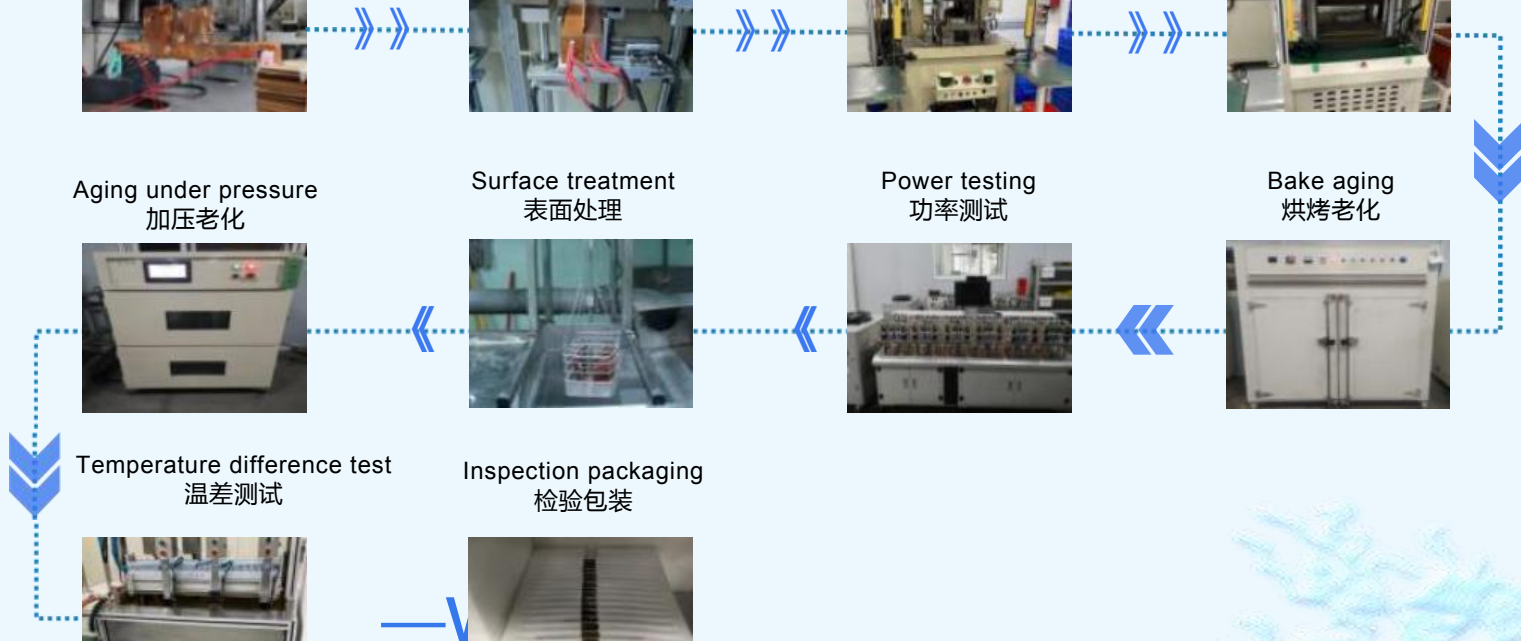
Bake aging
烘烤老化



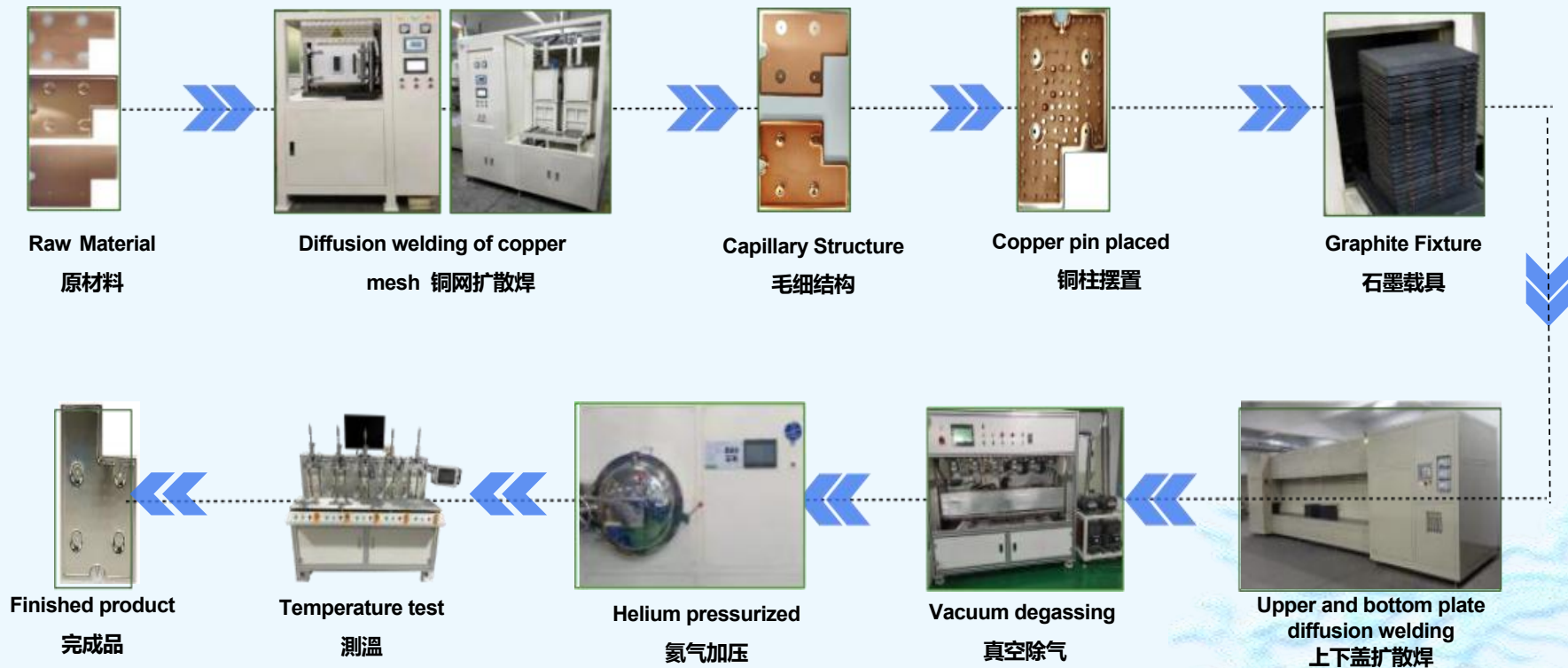
Temperature difference test
温差测试



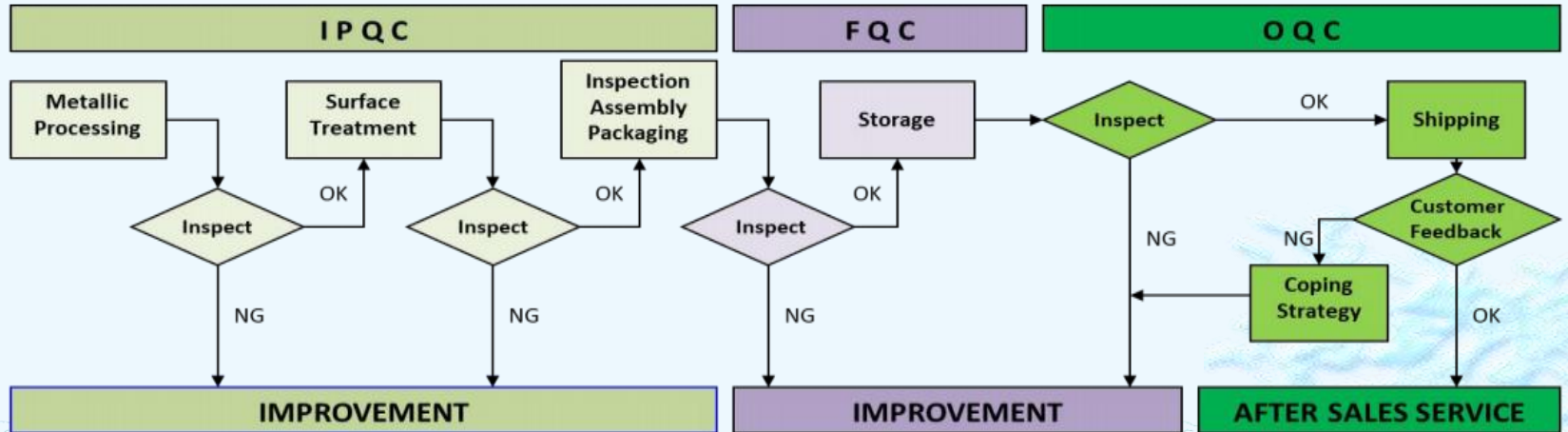
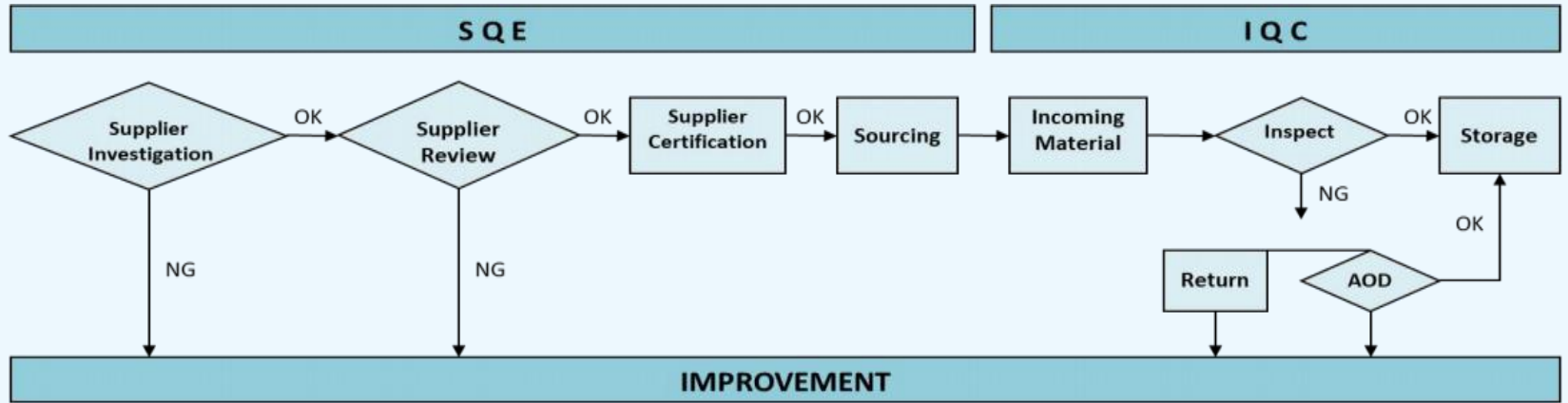
Inspection packaging
检验包装



Vapor Chamber Manufacturing Equipment



Quality System



Quality Control

➤ Test & Inspection Equipment In House

Necessary test equipment and inspection equipment are in house.

➤ Heat Pipe & Vapor Chamber Inspection

- Burn-In : 100 %
- Thermal Performance : 100 %
- Critical Dimension Check : 100 %
- Appearance Check : 100%

➤ Heat Sink & Cooling Module Inspection

- Appearance Check : 100 %
- Critical Dimension Check : 100 %
- Thermal Test for cooling module: 100 %

➤ Cold Plate Inspection

- Leakage Test : 100 %
- Pressure Drop Test : 100 %
- Critical Dimension Check : 100 %
- Appearance Check



Managementssystem



Inspection equipment

Dimension Inspection

CMM Image Dimension Measurement System
Automatic Laser Scan Measurement
Image Dimension
Measurement System
3D Scanner
Optical Comparators

Function Inspection

Ultrasound Flaw Test
Flow Resistance Performance Test
Metallographic Microscope
Pencil Scratch Tester
Spring Tension And Compression Testing

Reliability Inspection

Thermal Shock Test
Salt Spray Testing Chamber
Drop Tester
Simulation Car Transportation Testing
Taber Abrasion Tester
RCA Abrasion Tester

Appearance Inspection

Gloss Meter
Electrical Conductivity Meter
Coating Thickness Meter
Spectrophotometer
Metallographic Grinding Tester
Plating Thickness Gauge
Anodizing Sealing Gauge
Roughness Meter
Micro Magnifier
CCD Visual Inspection

Equipment For Reliability Test



Thermal shock test machine



Constant temperature and humidity testing machine



Accelerated Life Test



Qmax test platforms



3 D CMM



Salt spraying tester



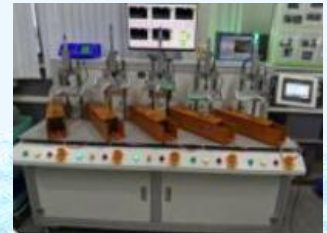
Leakage Tester



Micro Leakage Test (He Gas)



X-ray spectrum analyzer



Thermal performance tester

Green Production

EHS Facilities for environment friendly production

Photovoltaic System
Water Heating System
Automatic Anodizing Lines
Waste water recycling system
Waste phosphoric acid and sulfuric acid recycling system
Centralized Aluminum Dust Collection

✓ EHS policy

Obey government environmental law
Continuous improvement on pollution prevention

Clean production and operation
Environmentally sound management
Harmonious development

✓ EHS System

Environmental health & safety management system:

ISO14001 ISO45001

✓ QC080000 HSPM System

Raw Material control

Process control

Finished Products control

X-rays chemical analyze meter



THANKS

