

COVER ASSEMBLIES

COINING Metal & Ceramic Cover Assemblies for hermetic packages

Our one-piece, cover-frame construction simplifies assembly and is the solution to eliminating seal failures caused by misalignment of the lid and frame.

The combination of our automated process and superior weld attachment method ensures consistent, high-quality COINING Cover Assemblies (CCAs) and COINING Ceramic Cover Assemblies (CCAs).

COINING Cover Assemblies

COINING's Cover Assemblies (CCA) and COINING's Ceramic Cover Assemblies (CCAs) are ideal to hermetically seal electronic packages. The one-piece construction offers distinct manufacturing and cost advantages compared with separate base and solder frame components.

COINING offers Cover Assemblies with metal and ceramic covers and bases. Our fully automated manufacturing capability can easily scale to a wide range of volume needs.

Cover Assembly product offerings

Our product line includes:

- Ceramic Cover Assembly (CCAs)
- Metal Cover Assembly (CCA)

The services we offer:

- Turnkey solutions
 - Cover + attached preform + getter
- Attachment of COINING preform to customer supplied cover
- Attachment service for customer provided cover, getter and preform

Cover Assembly manufacturing process

We're fully automated

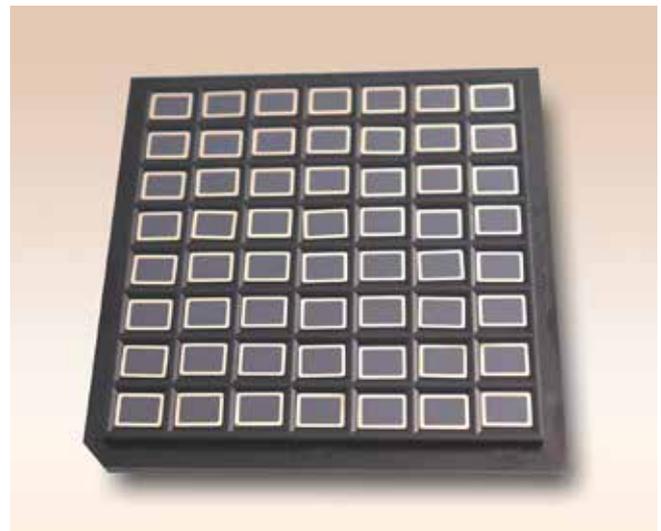
- Our Robotic Automated Packaging machines ensure precision, speed, and faster lead times

Our new attachment process yields superior weld characteristics

- Minimal raised material in area of weld
 - helps to eliminate yield losses due to leakers
- Tightly controlled weld penetration
 - stops at lid plating material (barrier layer)

Key benefits

- 1. Consistent, repeatable, high quality parts**
- 2. Rapid delivery of low- and high-volume CCAs and CCAs**
- 3. Continued use of qualified materials**
Use customer's existing material since weld attachment process is independent of base/barrier/plated materials and suppliers
- 4. Higher yield**
Improved weld characteristics reduces leakers



COINING Ceramic Cover Assemblies (CCAs) in Waffle Packaging

Our CCAs and CCCAs are packaged in our secure waffle packs through our fully automated robotic packaging system. Our Cover Assemblies are welded to ensure the most reliable hermetic seal. We are extremely flexible with our sizing, dimensions, and designs. Reach out to one of our engineers to learn how we can kickstart your project.

Cover/Base

Metals: Kovar™, Alloy 42, Copper/Moly, Aluminum alloys, Titanium alloys, Stainless Steel.

Ceramics: Al₂O₃, AlN, BeO

Plating: Nickel plate per QQ-N-290, 50 – 350 μinches thick. Followed by Gold plate per MIL-G-45204, Type III, Grade A, 50 μinches thick minimum. High-reliability, 4-layer plating is also available.

Size tolerance: Length & width: ± 0.003"

Flatness: < 0.001" for bases < 0.500" or ≤ 0.002" for bases ≥ 0.500"

Burrs: < 0.001"

Preform/Frame

Alloy: Au/Sn, Au/Ge, Sn-based (e.g. SAC 305)

Size Tolerance: Length & width: ± 0.003"

Thickness: ± 0.0003"

Assembly

Tack weld with three integral welds, minimum.

Position tolerance: ± 0.005",

Weld splatter: < 0.003" fabricate it, quickly, precisely and efficiently.

Custom sizes, alloys and plating schemes are also available.

Fully automated manufacturing

Our fully automated manufacturing enables us to rapidly transition from quote to manufacturing components and from assembly to packaging of the finished part. Production volumes from 50 to 500,000 pieces are readily accommodated.

COINING can provide the cover/base and preform in an assembly or we can assemble and weld customer supplied cover/base using a COINING preform.

Superior weld characteristics

COINING's advanced manufacturing technology produces superior weld characteristics that ensure hermetic sealing.

Our proprietary process eliminates raised material in the weld area and controls weld penetration into the cover/base material.

Alternate design possibilities

Contact COINING Engineering to discuss your alternate design challenges. Our engineers will assist you with customized designs for cover/base, preform/frame and related tooling.

Contact Us

Ask An Engineer a technical question, by simply scanning the QR code and dropping us a line.



Key Cover Assembly Specifications (inches)

		CCA	CCCA
Base	Material	Kovar™, Alloy 42, Cu/Mo, Al Alloys, Ti Alloys, Stainless Steel	Al2O3, AlN, BeO
	Metallization Std. 2 layer or 4 layer	Plated Ni, 50-350 µin	PVD/Evap Ni, 50-350 µin
		Plated Au, ≥ 50 µin	Plated/PVD/Evap Au, ≥ 50
	Size	0.125" Sq - 4.0" Sq ± 0.003"	
	Thickness	0.010 ± 0.001 typical. Others available upon request	
	Flatness	< 0.001" for < 0.500"; < 0.002" for > 0.500"	
	Burrs	< 0.001"	
Preform	Alloy	Au/Sn, Au/Ge, Sn-based (SAC 305), Bi-based (BSA 421)	
	Size	0.125" Sq - 4.0" Sq ± 0.003"	
	Thickness	0.0021" ± 0.0003" (Typical)	
Assembly	# Welds	3 minimum	
	Position Accuracy	± 0.003"	
	Weld Splatter	< 0.001"	

Key Cover Assembly Specifications (metric)

		CCA	CCCA
Base	Material	Kovar™, Alloy 42, Cu/Mo, Al Alloys, Ti Alloys, Stainless Steel	Al2O3, AlN, BeO
	Metallization Std. 2 layer or 4 layer	Plated Ni, 1.3 µ - 8.9 µ	PVD/Evap Ni, 1.3 µ - 8.9 µ
		Plated Au, ≥ 1.3 µ	Plated/PVD/Evap Au, ≥ 1.3 µ
	Size	3 ² mm Sq - 100 ² mm Sq ± 76.2 µ	
	Thickness	0.25 mm ± 25 µ typical. Others available upon request	
	Flatness	< 25 µ for < 12.7 mm; < 51 µ for > 12.7 mm	
	Burrs	< 25 µ	
Preform	Alloy	Au/Sn, Au/Ge, Sn-based (SAC 305), Bi-based (BSA 421)	
	Size	3.175 mm Sq - 101.6 mm Sq ± 76 mm	
	Thickness	53.3 µ ± 7.6 µ (Typical)	
Assembly	# Welds	3 minimum	
	Position Accuracy	± 76 µ	
	Weld Splatter	< 25 µ	



COINING at a Glance

COINING is a world-class manufacturer of micro components that have a big impact on people's lives. From sensors and satellites to implantable electronics, our high-performance metal products operate in a vast range of mission critical applications worldwide.

For people who demand precision, flexibility, and speed, COINING is the market leader in custom alloys, microstampings and solder preforms. COINING also offers specialized bonding wire, precision thermal management materials, and hermetic solutions. In fact, we're the largest solder preform manufacturer in the world. With a broad range of products, the most extensive library of preform dies in the industry - about 15,000 different tools - and our very own COINING labs to make custom alloys, we can move faster to market than our competition.

COINING is part of the Components & Wire division of AMETEK Inc., a leading global manufacturer of electronic instruments and electromechanical devices with annualized sales of approximately \$5.5 billion.



COINING™

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COMPONENTS AND WIRE

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