

Company Description of KOUNAN

KOUNAN

Corporate Information

Company Name :	KOUNAN Co.,LTD
Establishment :	Jan. 1970
Capital :	30 million JPY (214,286USD)
Representative :	Yoshitsugu Morita
# of Employees :	135
Sales :	54.41 billion JPY(2023) 38,869,620USD (1USD=140JPY)
Location :	17-3,Miyaushiro, Kezouji-cho, Nishio city, Aichi Pref.
URL:	http://www.kounan-inc.co.jp/



2008 ISO 9001:2000 certification
 2017 Certified as an Aichi Brand Company
 2023 Awarded as “300 small and medium-sized enterprises and micro businesses”
 (Ministry of Economy, Trade and Industry)



History

Established



Started business with semiconductor manufacturing equipment manufacturer



Established a subsidiary in Shanghai, China



Constructed a logistics building (954m²)



For business expansion, purchased an adjacent land of 4,950m² for the headquarters

1970

1977

1995

2005

2006

2010

2011

2015

2019

Started business with medical equipment manufacturer

Relocated the headquarters to the current address

Constructed an assembly factory (262 m²)

Established MG Holdings, and became its subsidiary



Head Office Factory



Logistics/QC Building



Assembly/Welding Factory



Welding Factory

Head Office Factory



Our Strength

Top-Level of Supply Capacity in Japan

Blocks & Flanges: We produce over 40,000 units per month

※Except sub/small components

Short lead-Time for Prototypes

Number of prototypes per year: Over 200 items

High QC level by fully integrated in-house manufacturing process

Machining → Polishing(baff/LAP/EP) → Welding(TIG/Laser) → Passivation →
Ultrapure Water Cleaning → Assembly

Ultra-precision long hole drilling technique and know-how

Over 30 years of experience in semiconductor industry



Cutting Process

Small hole machining ($\Phi 0.1 \sim \Phi 3.0$)

Material : SUS316L

$\Phi 0.1 \sim \Phi 0.5$ → Depth 20D

$\Phi 0.6 \sim \Phi 1.29$ → Depth 20mm

$\Phi 1.3 \sim \Phi 1.59$ → Depth 25mm

$\Phi 1.6 \sim \Phi 2.69$ → Depth 32mm

$\Phi 2.7 \sim \Phi 3.0$ → Depth 40mm

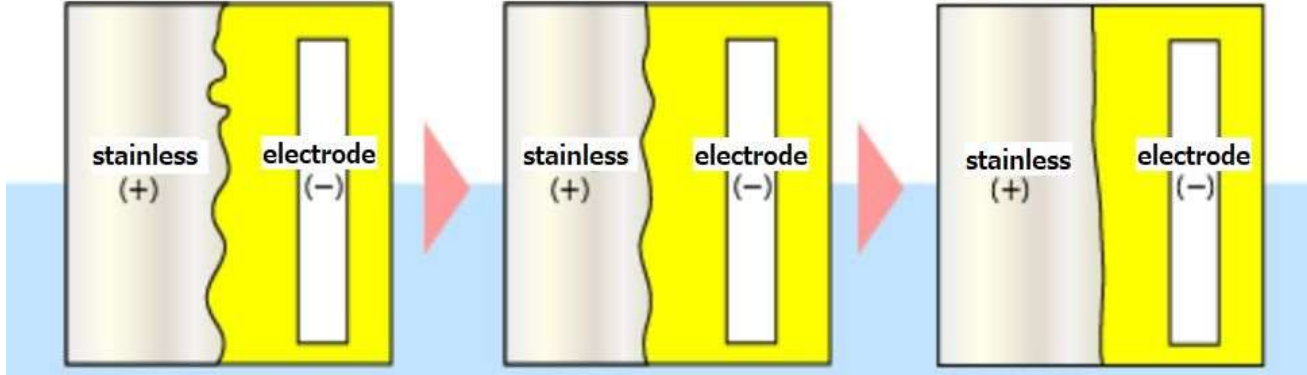
Vanishing

VCR/UPG/C-seal/W-seal



Polishing

Electrolytic Polishing/Lapping/Buffering



Electrolytic polishing(EP) is a process used to smooth and polish metal surfaces using electrochemical reactions.

Electrolytic Composite Polishing(ECP)

Ex:

Before Polishing Ra0.15 μ m → After Polishing Ra0.04 μ m



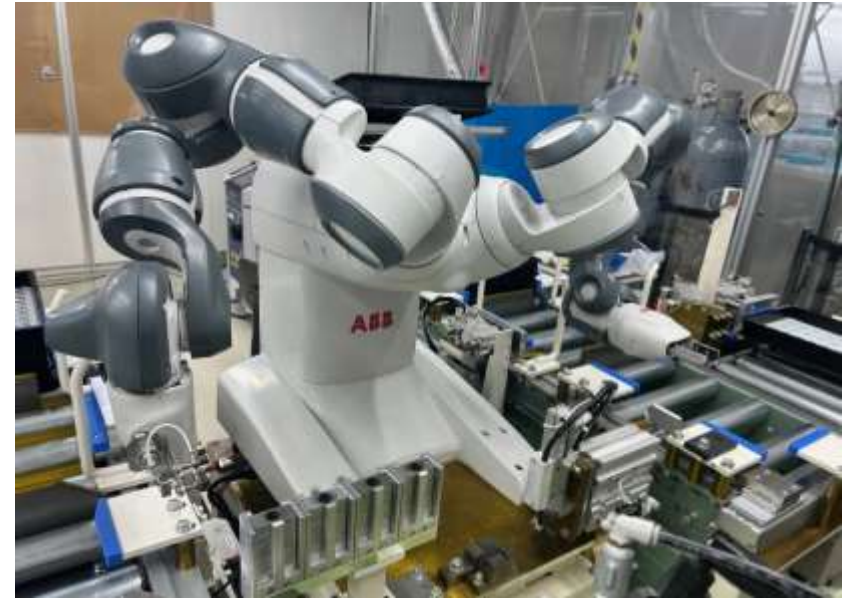
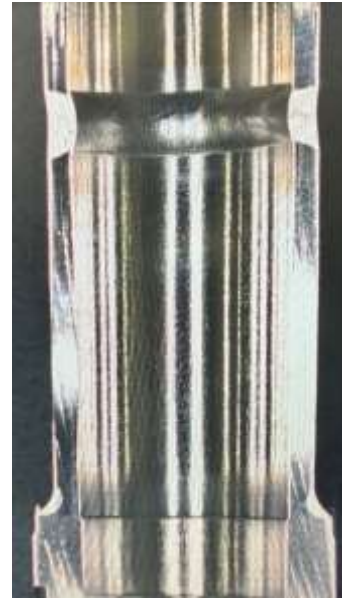
Welding

TIG Welding/Fiber Laser Welding

Thin-Wall Tube Welding

Leak Testing: Ensures the weld is airtight and free of defects.

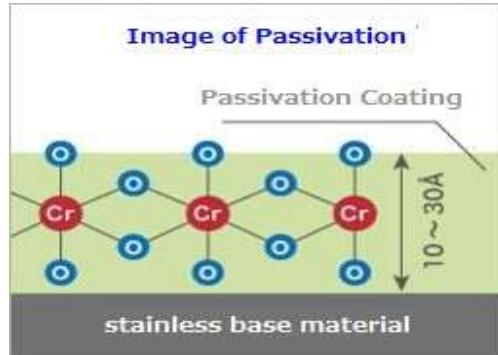
Macro Examination: Cross-sectional inspection of the weld to verify internal structure and weld penetration.



Controlled Weld penetration depth with a tolerance of $\pm 0.3\text{mm}$

Semi-automated welding using robots inside a clean booth.

Passivation



Passivation Coating:

1. Surface contamination ($C \leq 30.0\%$, $S \leq 1.0\%$, $P \leq 2.0\%$, $Si \leq 1.5\%$, $N \leq 2.0\%$)
2. $Cr/Fe \geq 2$, $CrO/FeO \geq$
3. $Cr/Fe \geq 1$ at a depth of $10\text{\AA}$, oxide coating thickness $\geq 20\text{\AA}$

Ultrapure Water Precision Cleaning ▪ ▪ ▪ De-ionized water production system/Resistivity of $16\text{ M}\Omega\cdot\text{cm}$ or higher



Surface Cleanliness Results

1. Oil residue amount
 2. TOC (Total Organic Carbon) management
 3. Particle count management
 4. Silicon dioxide amount management
 5. Bacterial count management
 6. Residual ion concentration (ng/cm^2)
- $F^- \leq 0.47$, $Cl^- \leq 9.12$, $NO_2^- \leq 0.34$, $Br^- \leq 0.59$, $NO_3^- \leq 18.52$,
 $SO_4^{2-} \leq 23.92$, $PO_4^{3-} \leq 38.62$,
 $Li^+ \leq 0.08$, $Na^+ \leq 8.97$, $NH_4^+ \leq 7.33$, $K^+ \leq 6.83$
 $Mg^{2+} \leq 2.42$, $Ca^{2+} \leq 5.98$

Clean booth/Clean room

Clean booth/Class 10,000 of cleanliness



We perform welding, leak checking, inspection, and packaging inside the clean booth

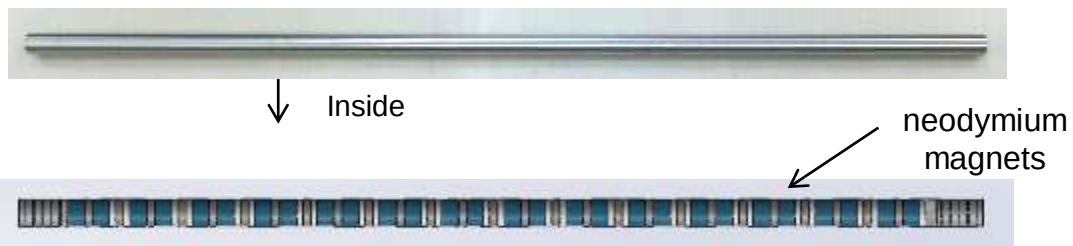
Clean room/Class 1,000 of cleanliness



Assembly

Assembling multiple types of linear guides used in “chip mounters”

Bar type (neodymium magnets inserted inside)



Flat type (with thin sheet neodymium magnets attached)



OEM production: Lens Edger / Medical

OEM production of lens edgers overseas
(process eyeglass lenses to fit frames)

Number of parts:

Approximately 450 parts

Overseas procurement ratio: 70%



SEMI-Standard

SEMI-Standard Material: SUS316L, high purity (HP)/ultra high purity (UHP) grade (Proterial, Daido Steel)

We can manufacture and guarantee based on SEMI-Standards

Evidence:Surface cleanliness Standard: Ion residual test

Surface quality Standard: SEMI F72 (surface defects, surface contamination, depth of oxide layer)
SEMI F60 (chemical composition of surface)

Composition			
Test	Element		Spec(%)
OES	Carbon	(C)	≤ 0.03
	Manganese	(Mn)	≤ 1.50
	Phosphorus	(P)	≤ 0.045
	Sulfur	(S)	≤ 0.01
	Silicon	(Si)	≤ 0.75
	Chromium	(Cr)	16-18
	Nickel	(Ni)	10-15
	Molybdenum	(Mo)	2-3
	Titanium	(Ti)	≤ 0.02
	Niobium	(Nb)	≤ 0.05
	Copper	(Cu)	≤ 0.3
	Aluminum	(Al)	≤ 0.01
	Calcium	(Ca)	≤ 0.02
	Nitrogen	(N)	≤ 0.10
	Selenium	(Se)	≤ 0.02

Watted Surface					
Test	Element		Spec.		
			AMAT	Lam	SEMI F19
Surface Roughness	Ra Avg.		≤ 5μin	≤ 5μin	≤ 5μin
	Ra Max.		≤ 10μin	≤ 10μin	≤ 10μin
AES (Surface)	Carbon	(C)	≤ 30	≤ 30	< 30
	Sulfur	(S)	≤ 1	≤ 1	< 2
	Phosphorus	(P)	≤ 2	≤ 2	< 2
	Silicon	(Si)	≤ 1.5	≤ 1.5	< 2
	Nitrogen	(N)	≤ 2	≤ 2	< 2
AES (Depth)	Oxide Depth		≥ 20 Å	≥ 20 Å	≥ 15 Å
	Carbon Layer		≤ 10 Å	≤ 5 Å	-
	Cr/Fe @10 Å		≥ 1.0	≥ 1.0	-
	Detached FeO		None	-	-
SEM	Avrg		≤ 15	≤ 15	≤ 10
	Max		≤ 25	≤ 25	≤ 20
XPS	Cr/Fe		≥ 2	≥ 2	≥ 1.5
	CrO/FeO		≥ 3	≥ 3	≥ 2