

Compact Injection Molding Machine "Command Mobile"

**Development of Desktop Super-compact
Injection Molding Machine that Enables
Zero Waste.**



Mold tooling technology is indispensable for the mass production of uniform products. Shinko Sellbic has not only designed and manufactured molds, but also devised various unique products related to mold tooling.

The company's advanced technology has culminated in the development of the super-compact injection molding machine the size of an A4-size laptop PC for which Shinko Sellbic was awarded the prize this time. The realization of this "mobile factory" utterly changed the commonly held idea about molding machines; that they are cumbersome, heavy, and costly. In addition, the development enabled "zero-waste" production by using resin materials only where necessary. This machine affords such wide-ranging benefits as saving resources, energy, pace, and reducing delivery cost.

What led to this revolutionary development was a concept totally devoid of any preconceived ideas: **"A tooling machine can come in any form as long as it can mass-produce uniform products."**



**Flat screw
[Scroll]**



**Hot runner
[Micro probe]**



**UNiT Mold
[Command System]**



**Decelerator
[Sellcoid]**

Corporate Profile

● Corporate Name	SHINKO SELLBIC Co., Ltd.
● Representative Director	Hiroshi Takeuchi
● Establishment (year)	1987
● Capital	34,000,000yen
● Number of Employees	10
● Head Office	3-14-5 Hatanodai, Shinagawa-ku, Tokyo, 142-0064, Japan Tel. +81-3-3785-7800 Fax.+81-3-3785-7899
● e-mail	sellbic@sellbic.com
● URL	http://www.sellbic.com

Business Overview

1. Command Mobile Series.
Compact Injection Molding Machine.
2. Command System.
Unit Mold System.
3. Command Probes
Exchange Type Hot runner System.
4. Mold
Production of Mold for injection.
5. Mold Parts.



NEURO-Vision Sensor

Super 5000K-7Kmodel

It has been difficult to detect delicate objects with ordinal sensing systems due to the influence of the unevenness of pixel elements. However, TECHNOS has invented a technology called "Time AxisTriangle Process", which combined our patented algorithm "Triangle Process" and "Space-Temporal Sensing". It neutralizes the unevenness of sensor array elements. Now it is possible to detect microscopic defects with far more accuracy than ever before.

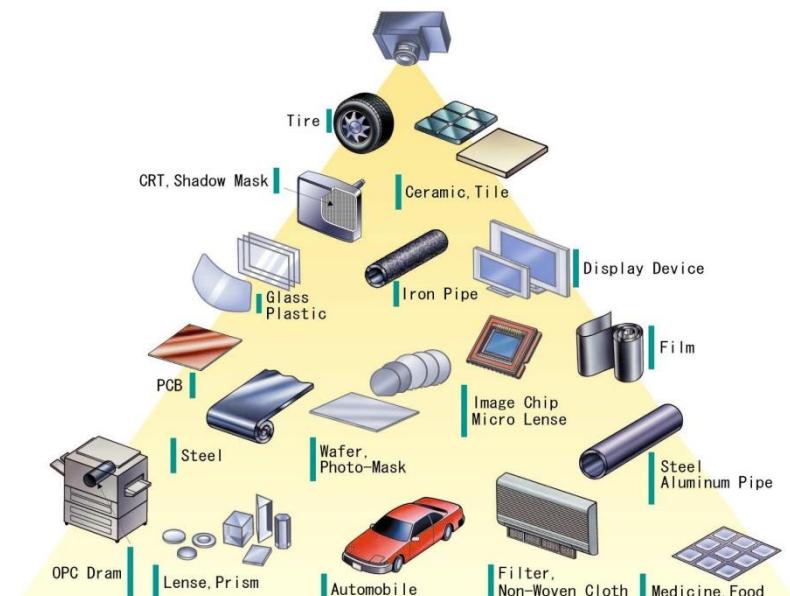


Neuro-VisionSensor
Super 5000K
7K Model

The inspection accuracy of TECHNOS Super 5000K 7 KModel far exceeds the human eye. Specifically, it is able to detect microscopic defects with 144 times more accuracy than the human eye, as well as low contrast defects with 100 times accuracy than the human eye.

Applicable to any Industries

Detecting from 45nanometre ultra tiny defects on small objects to over 80m length large architectures.



Application Example 1

Oil Storage Tank

Super 5000K 7KModel completes all image capturing and online detection at only 6 minutes to inspect the inner wall of 100,000-liter oil storage tanks (diameter=82m, height=24m), while human work takes 2-3 months. It is possible to detect 0.2 mm cracks on the wall.

Application Example 2

Steel, Paper, Film, Rubber, Glass and More

Super 5000K 7KModel can detect 50µm spot defects and 10µm line defects which covered within 1,400mm camera sight width. The sight width can be set freely to match with the objects.

Corporate Profile

● Corporate Name	TECHNOS JAPAN Corp.
● Representative Director	Yoshiro Yamada
● Establishment (year)	1965
● Capital	20,000,000yen
● Number of Employees	43
● Head Office	4-2-3 Shiba, Minato-ku, Tokyo, 108-0014, Japan Tel. +81-3-3453-9111 Fax.+81-3-5484-6785
● e-mail	technos@technos.jp
● URL	http://www.technos.jp

■ Company's Motto

Integration & Innovation

■ Company's Aim

Our aim is to create world non-existing solutions by gathering its own technologies which leads world standards. And we offer the tool to destroy all the defects from the manufactured products then productivity should dramatically be increased.

By our solutions advanced in any other venders, all the limited material resources are implemented effectively.

We do to contribute for growth of human being society.

We do to support TECHNOS-Group and all employees and its families.

TECHNOS do pursue to be happy on all cooperators.

■ Our Goal

TECHNOS creates totally new systems by integration of multiple technologies.

The products have been installed in 100% of Domestic top 10 manufactures and 240 stock market listed large scaled companies.

Our goal is thinking and acting to implement real market needs by combining different variety of technologies.

As a result, our approach should contribute the customers demands such as to improve the yield rate and also to neglect any causes for the current defects.

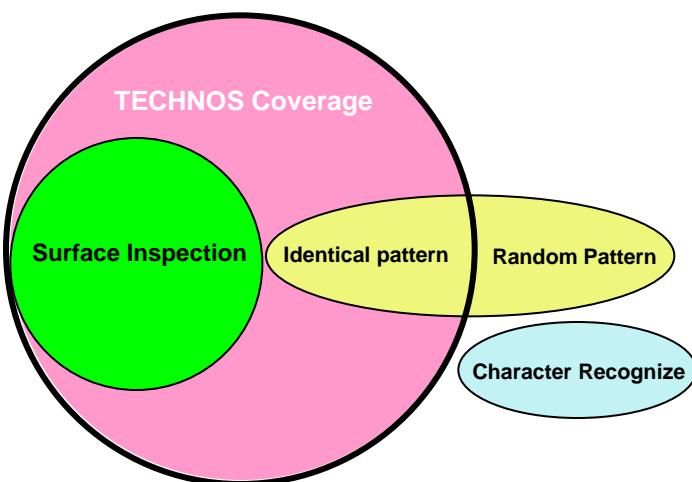
■ Business Structure

Our major plying field is Automated Inspection System. Automated Inspection System is replacing human jobs by image processing technologies for the purpose of OK or NG judgment onto the stream line of products from every manufactures.

TECHNOS markets the system for detecting all the defects automatically, furthermore it chases the causes for the defects and then represents such information to the operators. Generally speaking "Image Processing" contains

1. Surface Inspection, 2. Pattern Inspection, 3. Character Recognition.

TECHNOS system is suitable for surface inspection and patterns which constructed by repeatedly identical (trendy) patterns.



■ International Patents /Awards

The world greatest accurate vision system itself is updated by own newest technologies. These technologies are celebrated with several awards such as Governmental New Technologies Awards.

In parallel, said technologies are registered in 14 different countries as international patents .

Though our basic philosophy is trying best effort to realize actual user needs totally new concept which makes it feasible to perform human being functionalities.

Product Overview

TECHNOS Super 5000K 7KModel is a visual inspection system integrated with many excellent functions including those of the human eye, which is a product development by the extension of the international patent original technologies. The system is made flexible so that you choose a specification suitable for detection accuracy required in an inspection.

Super 5000K 7KModel insures high accuracy 144 times that of visual acuity of the human eye, with is about 1,000 times that of a conventional CCD line sensor camera with 4,000 pixels. Landmark product “Trend sensing”, “Tremor sensing” and “Time Axis Triangle sensing” enable you to select a system grade, as you need.

Super 5000K 7KModel has single ultra high accuracy camera, which enables an inspection with accuracy equivalent to that of 28 units of CCD camera. It can be easily set up for operation in the existing production and or inspection line. It is an entirely new system with simple configuration so that the maintenance can also be easily done.

In addition to basic outputs of the OK/NG criteria of detection results, you can customize the system to suite your needs with the following routine programs; Map Navigator to display the locations of defects, and Active Navigator to record automatically real images of defects, which is freely accessed on the network of the system.

The Super 5000K 7KModel system supports a wide-range of applications, for example in the following industries;

The Steel Industry, where heavy-duty system operate full-time in-line.

The paper Mill Industry, where paper feed machines and rollers operate at a line-speed up to 10,000m per minute.

The Semiconductor Industry, where submicron-order chips are in need of inspection.

The Glass and Film Industries, where transparent materials are finely inspected.

Digital Hand-held "Pocket" Refractometer PAL-1

Pocket → Palm → Perform

The PAL is a completely new and redesigned digital hand-held instrument that will change the traditional conceptions of refractometers. The PAL's surprisingly compact size allows you to easily carry it around and use it indoors as well as outdoors.

The size, design, function and performance will surprise you. The PAL will expand your range of measuring possibilities.



A new ergonomic design for comfort and ease of use!

In pursuit of an "easy to use," "easy to operate," and ergonomic architecture of new instruments, ATAGO has achieved a "palm-fitting" masterpiece as well as a unit that is high in hygienic properties. By reducing the number of unnecessary assembly parts, we have reduced the risks of a germ reproductive environment. Through our efforts to produce a hygienic instrument to be used in any industry, these units are designed to be completely washable. The new Pocket PAL has been approved by the HACCP, and are equipped with the new ELI and backlight feature, which ensures accurate measurements. Requests from our customers worldwide are reflected in the development of the new PAL units.

Features

- * Calibration with water only
- * Measurement in 3 seconds
- * Extremely water resistant (IP65)
- * Will float if accidentally dropped in water
- * Light & Compact, 100g
- * Ergonomically designed for one-handed operation
- * Automatic Temperature Compensation (ATC)
- * Measurement temperature up to 100°C
- * 2 carrying options: strap and case



Always clean and shiny
can be cleaned under running water

Measurement Method



(1) Apply 2-3 drops onto
the prism surface.



(2) Press the START key.



(3) Brix(%) value displayed
in 3 seconds!

Corporate Profile

• Corporate Name	ATAGO Co., Ltd.
• Representative Director	Hideyuki Amamiya
• Establishment	1940
• Capital	96,000,000yen
• Number of Employees	160
• Head Office	The Front Tower Shiba Koen, 23rd Floor 2-6-3 Shiba-koen, Minato-ku, Tokyo 105-0011, Japan Tel. +81-3-3431-1943 Fax.+81-3-3431-1945
• e-mail	overseas@atago.net
• URL	http://www.atago.net/

Business Overview

Established in 1940, ATAGO has continuously made strides in the research and development of a wide variety of optoelectronic products, mainly refractometers. ATAGO products are now used in various industries from food processing, beverage industries to petrochemicals and metalworking.

All of ATAGO's instruments are manufactured in Japan and are exhaustively tested before leaving the factory—the production control system from manufacturing, assembly, inspection, to delivery—thus maintaining an excellent reputation for equipment of high quality and excellent operational reliability. ATAGO products are recognized as a reliable brand and enjoys the fullest confidence of end users in more than 154 countries throughout the world.

In August 2001, ATAGO U.S.A., Inc. opened its doors in Kirkland, Washington, U.S.A. as their American subsidiary office. As we continue to strive for globalization, maintaining a high level of customer service to both their distributors and end-users worldwide is an integral part of our company philosophy.



Digital Hand-held

**"Pocket" Refractometer PAL
line-up****PAL-1**

The PAL-1 has the measurement range Brix 0.0 to 53.0%, which can be used to measure the concentration of many different samples.

PAL-2

The measurement range of the PAL-2 is Brix 45.0 to 93.0%, and is used to measure various high concentration samples such as jam, marmalade, jelly, honey and concentrated juice.

PAL-3

Designed with a full Range (Brix 0.0 to 93.0%), the PAL-3 works perfectly for measuring almost any sample. The PAL-3 has been modified to have a high measurement accuracy at Brix $\pm 0.1\%$.

PAL-11S

The PAL-11S is briefly allowing anyone to take precise and accurate blood serum protein measurements with only a small amount of sample. Its waterproof feature makes clean-up easy after measurement.

PAL-102S

The PAL-102S is designed for controlling the concentration of cutting oils. This is suitable for the measurement of the percent dilution and controlling the percent concentration of hydraulic oil and cleaning liquid.

PAL-BX/RI

The PAL-BX/RI has dual scales to measure Brix (full range : Brix 0.0 to 93.0%, high measurement accuracy : Brix $\pm 0.1\%$) and refractive index (resolution 0.0001).

Special Scales

Now we have released 80 new scales of Digital Hand-Held "Pocket" Refractometer PAL series!! You can select whichever scale you want for your application and sample.



Wide variety of ATAGO's Refractometers.

◆ Hand-held Refractometers MASTER series



The hand-held is the most basic type of refractometer. The MASTER series functions such as Easy-to-Read, Easy-to-Hold, Smooth sampling, Easy disposal of sample from the edge, the improvement of hygiene aspect by employing the new type of grip, and well balanced structure, emphasis is also placed on its design, well exemplified by the streamlined body and the strong grip with rich texture.

◆ Digital Refractometers Palette series



The Palette series is the ultimate compact instrument which is the result of years of proven reliable performance, ease of operation and the functionality of design.

The Palette series has been modified to have a high measurement accuracy at Brix $\pm 0.1\%$. Also, this unit is programmed with the user-scale feature.

◆ Digital Refractometers RX series



Digital bench-top Refractometers are designed to be highly accurate and provide reliable measurements while facilitating a simple measurement method for the operator. When compared to analog and Abbe Refractometers, the large digital readout makes reading the measurement value faster and easier.

◆ In-line Refractometers



These in-line models can be incorporated in piping of manufacturing plants, liquid mixing devices, and washing apparatuses to continuously measure the concentration of various liquids. They are suitable for use in the control of mixing, concentration, fermentation, and control of the concentration of water-based or alkali-based detergent, etc.

Strippable Water Paint "MASKING COLOR"

【Features】

- It is generalized as the industrial paint which can pear off protection paint at one time.
- Masking Color can be easily peeled off or the peeled off paint
- We use resin with the growth moderately softly.



【Impact】

- Masking Color is also resistant to sunlight and highly durable, human and eco-friendly water-based paint.
- Window displays are available easily. Use expansion is possible.



【Using Masking Color】

- It is a pen type-formed container with the nozzle. The tools such as brushes are unnecessary
- Masking Color drip-resistant design so that it can be used to draw with ease directly on surfaces.
- The color variations are all 20 colors.
- Two sizes are available:S size/38ml L size/168ml



Corporate Profile

● Corporate Name	TAIYO TORYO CO.,LTD
● Representative Director	IMITSUO HIRAMOTO
● Establishment (year)	1951
● Capital	49,500,000yen
● Number of Employees	22
● Head Office	6-4-18 Higashikoujiya, Ota-ku, Tokyo, 144-0033, Japan Tel. +81-3-3745-0111 Fax.+81-3-3743-9161
● e-mail	info@maskingcoor.com
● URL	http://www.maskingcolor.com

Business Overview

Development and production, sale of buildings and industrial special paint.
Development and production, sale of the masking color.



Ultra High Precision Electron Beam Lithography System ELS-F125

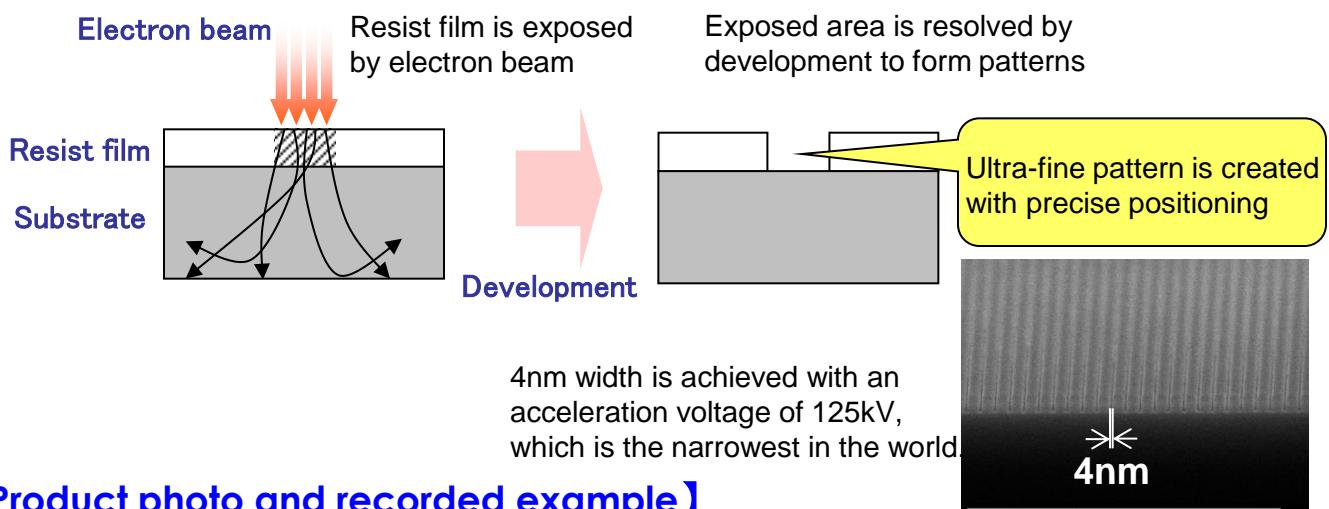
【Features】

- Ultra fine lithography is achieved by electron beam with a high acceleration voltage of the maximum 125kV and by minimizing beam diameter.
- Precise positioning with 0.1 nm or less precision is also enabled.
(1 nm = 1 / 1 million of 1 mm)

【Effect】

- Used as research and development equipment for advanced next-generation semiconductor devices.
- Contributing to progress of industry such as optical devices and nanotechnologies by rendering material structure ultra-fine.

【Principle of electron beam lithography】



【Product photo and recorded example】

《Overview of product》

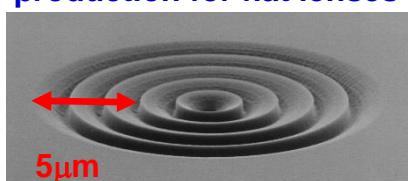


《Mobile phone parts》



Camera lens

Example of metal mold production for flat lenses



【Main customers】

- Harvard University, Massachusetts Institute of Technology, Kyoto University, Osaka University, National Institute for Materials Science, RIKEN etc.

Corporate Profile

● Corporate Name	ELIONIX INC.
● Representative Director	Tetsuyuki Okabayashi
● Establishment (year)	1975
● Capital	270,000,000yen
● Number of Employees	100
● Head Office	3-7-6 Motoyokoyama-cho, Hachioji-shi, Tokyo, 192-0063, Japan Tel. +81-42-626-0612 Fax. +81-42-626-6136
● e-mail	sales@elionix.co.jp
● URL	https://www.elionix.co.jp/english

Business Overview

Advance of science and application technology plays an important role in making our convenient and comfortable life, as well as in maintaining a natural environment. Recently, research and development for nanotechnology, which is remarkable as an innovational technology, are progressed in various fields, such as information and communication, life science, environment, and energy. Systems with advanced functions and high performances are quite important for the success of forefront research and development. And, we are engaging a development of truly useful systems, which meet the requirement from the research fields.

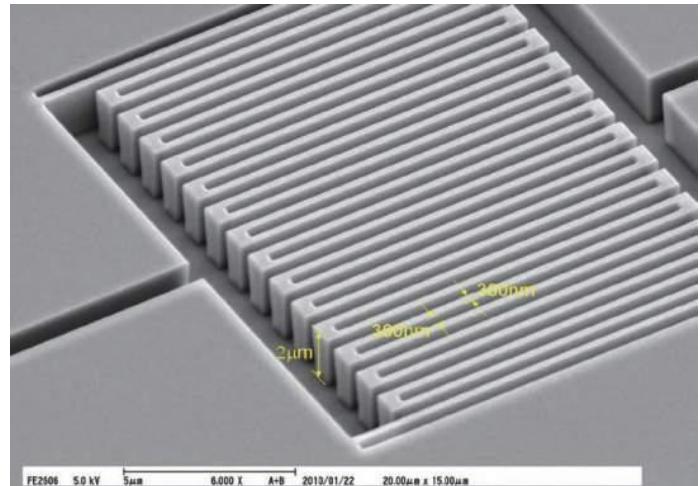
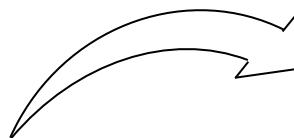
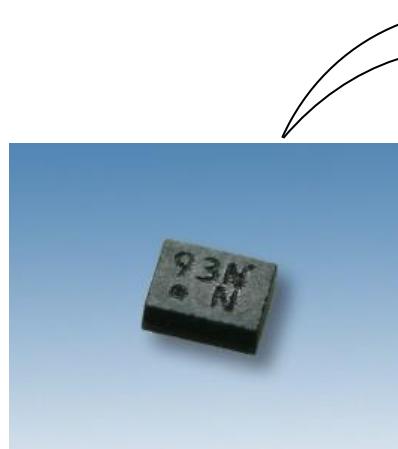


For the purpose of corresponding correctly and speedily to advancing and varying requirements from our customers, each section of our company carries out development, production and sales, consistently, which is characteristic of us. We are always challenging to the development of the new systems, which has unknown factors and non-small risks, and fulfill the social responsibility to continue to be a reliable company.

Application of EB lithography

● SAW (Surface Acoustic Wave) device

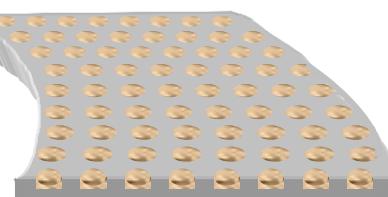
Frequency filter to extract electric signals with a certain frequency band



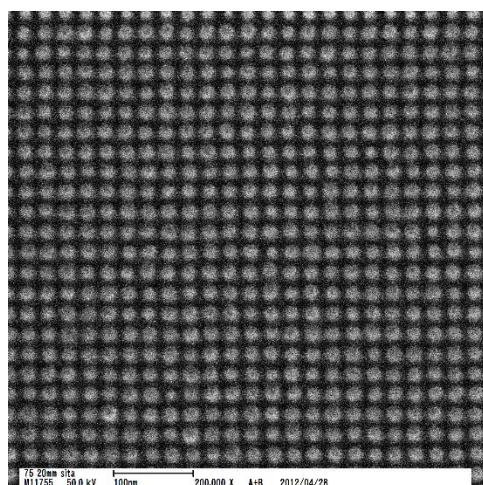
Pattern for SAW device recorded by ELS-F125

● Next Generation Hard Disk

Bit Patterned Media



Magnetized layer



25nm pitch dot pattern recorded by
EBW-F150C



EBW-F150C:
Electron Beam Disk Mastering System
Acceleration voltage: 150 kV

Products

● Nano-Fabrication

EB Lithography System

New

Ultra-fine and high acceleration voltage EB Lithography System

ELS-F150



Ultra-High Precision EB Lithography System
ELS-F100

High throughput EB Lithography System

ELS-HS50



Ion Etching System Ion Coating System

ICP Plasma system
EIS-700



Nano Ion Beam Fabrication System
EIP-5400

Small sized ECR Ion Shower system
EIS-200ER



● Nano-Observation

EB 3D-Roughness Analyzer



EB 3D Surface Roughness Analyzer
ERA-600FE

EB 3D Surface Roughness Analyzer
ERA-9000



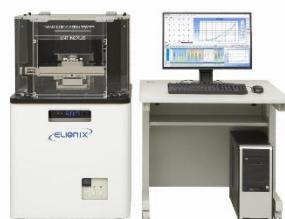
Surface Force Analyzer

ESF-5000Plus



Nano Indentation Tester

New
ENT-NEXUS



Multi-Turn Time of flight Mass Spectrometer

infiTOF

【Features】

MS can detect most chemicals and/or drugs at extremely low levels. If there was one teaspoon of an illicit compound inside a filled up cup of water in a baseball dome, a properly equipped mass spectrometer could detect it. Problem is, current instruments are too large and too complex to operate for them to be feasibly used in markets like this. That's where we come in! Our instrument is more sensitive and more precise than instruments currently utilized in airports today. What this means is fewer false positives with a greater ability to detect prohibited items. This in the end elicits an even greater peace of mind!

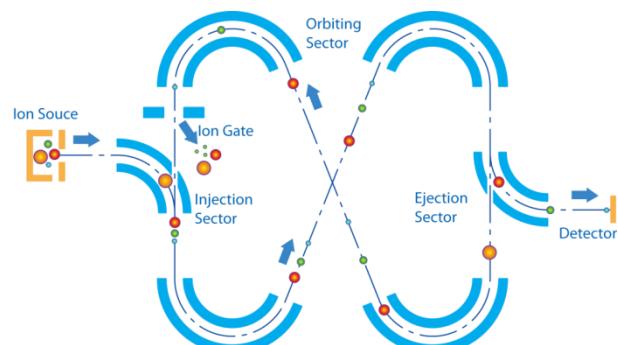


infiTOF

【Principles, Structure, Comparison,etc】

TOF(Time of Flight) resolution is related to flight length, so high performance TOF is always BIG. Our technology "Multi-Turn" consists of four orbiting electrode to make a closed loop. After ions get into the loop, they fly in the track as long as they want. (Injection/ejection electrode are not shown in the drawing)

Theoretically the optics will never lose any ions during flight when this is the case.

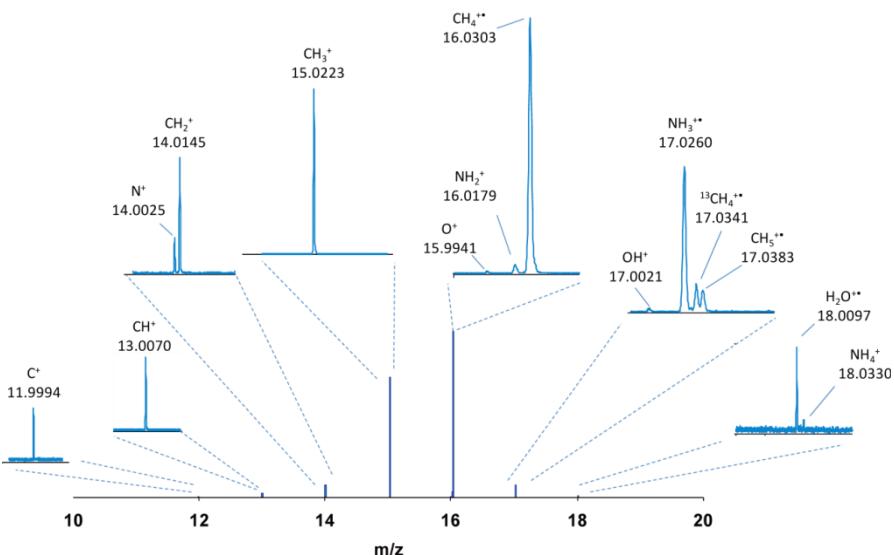


In practice the instrument loses about 0.5% per turn, due to mean free path effect. One remaining point of contention with researchers is the large intensity drop between 0.5 turn and 1.5 turns, which was about 40%. As stated earlier, 0.5 turn is Linear Mode, which has a much wider acceptance range of energies and angles than multi-turn mode, which in turn allow a much larger number of ions to enter the optics. Many researchers believe these optics have poor transmission power, but this is not true. 0.5 turn is a kind of special mode for getting maximum sensitivity, and multi turn mode can still be considered reasonably sensitive based on the per turn losses of only 0.5% after the initial 1.5 turns.

Other TOF instruments never be able to detect Hydrogen due to peak width and sampling speed matter.

Multi-Turn is also capable of keeping higher resolving power for low molecule range especially below m/z 50.

This gas sample contains NH₃ and CH₄, however NH₂(fragment of NH₃) and CH₄ are same nominal mass: 16, so low resolution MS never be able to separate them.



Corporate Profile

● Corporate Name:	MSI.TOKYO, Inc.
● Representative Director	Shinichi Miki
● Establishment (year)	2008
● Capital	81,686,000yen
● Number of Employees	1-3-10 Tobitakyu, Chofu, Tokyo 182-0036 Japan
● Head Office	Tel. +81-42-426-4581 Fax.+81-42-426-4585
● e-mail	info@msi-tokyo.com
● URL	http://www.msi-tokyo.com

Business Overview

There are many fears these days, but no perfect solutions exist. We started out as a university venture. Osaka University has been developing many unique and cutting edge MS technologies, and has made it possible to create new markets by using high-resolution, compact time of flight MS. Our goal was to create a portable high resolution mass spectrometer with an intuitive software interface and a price point that would match its size. The last 2 years have been spent working towards realizing this dream. We feel we have come close to this goal with our first product release and hope you agree!

The next generation flange pipe joint

“CF Joint”

【Features】

- Adopts originally developed self-sealing gasket and constricting stopper.
- Mounts readily, with half the usual number of bolts and use of short-neck carriage bolts.
- Half the weight of conventional joints and with a small outside diameter, helping to reduce CO₂.

【Impact】

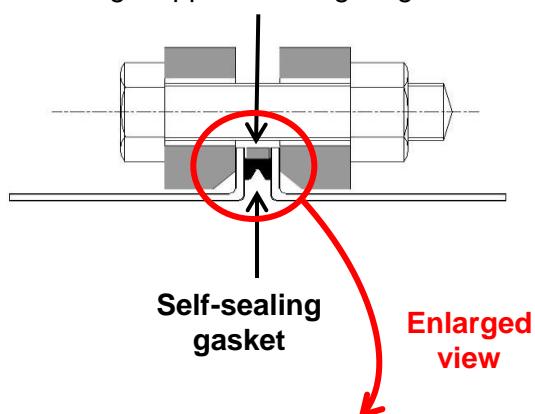
- Able to be tightened with a single spanner, without the need for torque control.
- Easy to work with, even by inexperienced hands.
- Already used in Haneda Airport International Flight Passenger Terminal and sold to Tokyo Fire Department, Japan Railway East and West companies, etc.

CF Joint internal structure

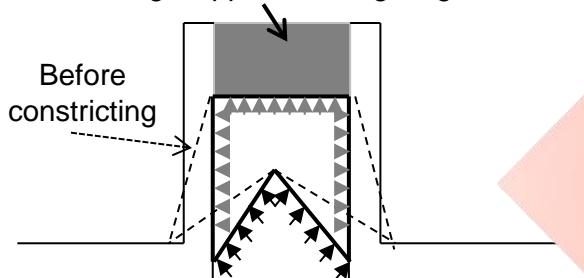


【Principles, Structure, Comparison, etc】

Constricting stopper doubling as gasket reinforcing ring



Constricting stopper doubling as gasket reinforcing ring



Rising water pressure increases surface pressure on the seal area, raising the sealing effectiveness.

Corporate Profile

● Corporate Name	Nowla Engineering Co.,Ltd.
● Representative Director	Kohei Hotta
● Establishment (year)	1991
● Capital	88,000,000yen
● Number of Employees	140
● Head Office	4-8-4 Iidabashi, Chiyoda-Ku, Tokyo,102-0072 Tel.+81-3-3221-1222 Fax.+81-3-3221-1224
● e-mail	nowla@alto.ocn.ne.jp
● URL	http://www.nowla.co.jp/

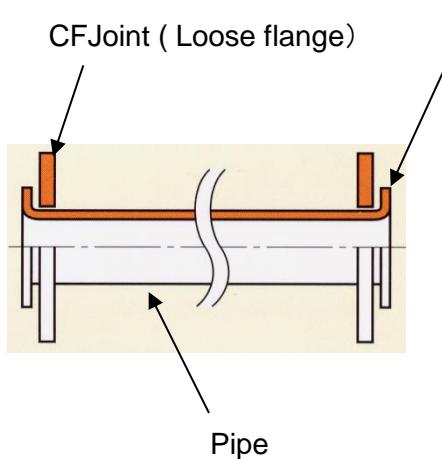
Business Overview

- Building equipment piping and plant piping design
- Prefabricated units processing and marketing the product piping ditto
- Sales of piping materials
- For the development and sale of computer software
- Electrical plumbing and air conditioning planning, research and design
- Maintenance work on the above



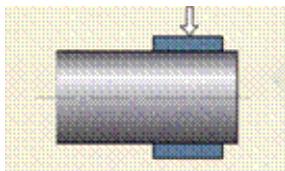
Pipe end flare processing machine Nowla Machine

[Flare processed tube ends does not require machining and welding stub end]

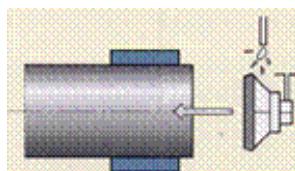


Nowla Machine W-400 Model

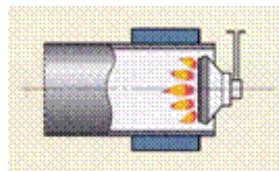
[Machining process of pipe end flaring]



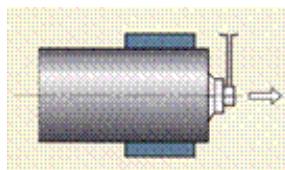
① Insert the pipe, fixed.
(put loose flange before)



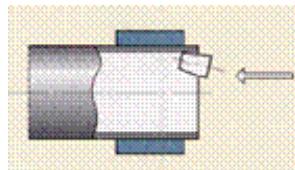
② In case of warm processing,
Insert the heating burner.



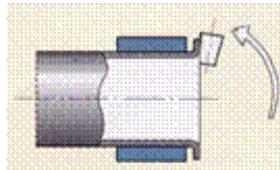
③ Igniting the burner and heat.
(Note) Heating temperature of varieties
for different uses computer controllles
adjustments.



④ After heating, remove
the burner.



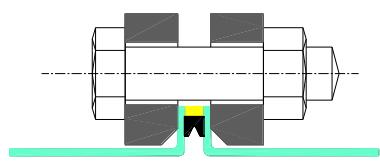
⑤ Insert Nowla-pin.



⑥ Rotate Nowla-pin, and flaring.
(Note) 0 ~ 90 ° angle of the flaring
angle can be selected freely

[Features]

- Stub end is not required and reduction of welds.
- Improve construction site working conditions.
Easy construction and shortening the construction period.
- Reduction of cost and CO₂.



CF Joint

【Specifications of Nowla machine】

Model Specifications	W-400	W-200
Machine dimensions	Width:1530 Depth:2500mm Height:1700mm	Width:1000 Depth:1800mm Height:1350mm
Weight of machine	4500kg	2500kg
Power	Φ3.0 × 200V 60A 50Hz/60Hz	Φ3.0 × 200V 30A 50Hz/60Hz
Tube material can be processed	Stainless steel, carbon steel pipe	Stainless steel, carbon steel pipe
The thickness of the tubes can be processed	Stainless steel pipe 1.5mm~5.0mm carbon steel pipe 4.2mm~8.2mm	Stainless steel pipe 1.2mm~4.0mm carbon steel pipe 2.8mm~6.0mm
Outside diameter of the tube can be processed	O carbon steel pipe SGP(Black) : 65A~400A, SGPW(White) : 65A~300A STPG370Sch40 ; 65A~150A O Stainless steel pipe TPD: 75Su~300Su TPA, TPYSch5S/10S : 65A~400A TPA20S: 65A~150A	O carbon steel pipe SGP(Black) : 20A~200A, SGPW(White) : 20A~200A STPG370Sch40 ; 20A~100A O Stainless steel pipe TPD: 30Su~200Su TPA, TPYSch5S/10S : 20A~200A TPA20S: 20A~100A
Warm processing	Stainless steel pipe (Temperature 150~200°C) Galvanized steel pipe (white) (Temperature 150~200°C)	Stainless steel pipe (Temperature 150~200°C) Galvanized steel pipe (white) (Temperature 150~200°C)
Cold processing	Carbon steel pipe (Black)	Carbon steel pipe (Black)
Warm gas heating	Propane gas	Propane gas

【Features of warm processing】

- In the case of stainless steel pipe:
Reduction of work-hardening • Prevention of martensite • Retention of non-magnetic
- In the case of carbon steel pipe:
For galvanized steel pipe is not required to repair the coating peel off

Bri-o-coat®

Features

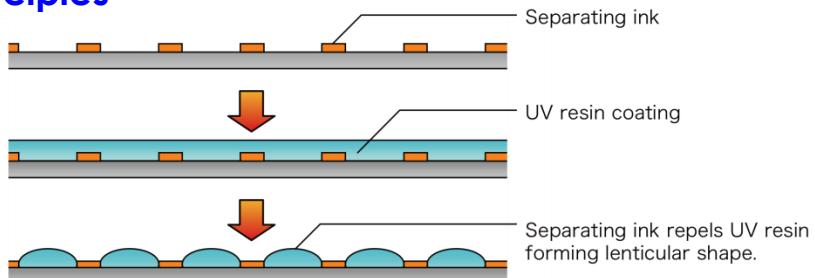
- Value-added embellishment technology for decorating printing.
- Fine Bri-o-coat® pattern produced on print surface to realize highly decorative, attractively designed printed matter.
- Can be produced with existing printer using special UV resin and separating ink.
- Ease to design and wide choice of design patterns.



Impact

- High production efficiency, so value can be added with minimal rise in cost.
- High customer satisfaction result in large number of repeat orders.
- Difficult to duplicate, for high degree of counterfeit protection.

Principles



Pamphlet covers



Product package



GRAPAC JAPAN CO., INC.

GRAPAC JAPAN CO., INC.

Corporate Profile

● Corporate Name	GRAPAC JAPAN CO., INC.
● Representative Director	Yoshihide Yumoto
● Establishment (year)	1925
● Capital	100,000,000yen
● Number of Employees	100
● Head Office	2-7-38 Tsutsumi-dori, Sumida-ku, Tokyo, 131-0034, Japan Tel.+81-3-3616-1290 Fax.+81-3-5630-1186
● e-mail	k_ishibashi@grapac.co.jp
● URL	http://www.grapac.co.jp/

Business Overview

Manufacturing and service for graphics and packaging.

1. Package / Printing

- Offset printing, manufacturing package, manufacturing card

2. Related 3D business

- 3D printing material "HALS® (Honeycomb Array Lens Sheet)"
- Valued-added embellishment technology for decorating printing "Bri-o-coat®"
- Lenticular printing

3. Collection of digital contents / Download site



3D PRINTING MATERIALS

HALS®

3D Printing Materials

- HALS® make it possible to realize 3D effect by using UV offset printing machinery and HALS® lens sheet.
- It is not necessary for HALS® to prepare a special software of image integration like lenticular printing.
- With HALS®, expanding various kinds of usage like sales tool, package and prevention of counterfeit.
- Wide range of HALS® lineup (0.25mm~0.50mm).
- We have already sold HALS® to more than 30countries.



HALS® (Honeycomb Array Lens Sheet) is a micro-array lens sheet, which is arrayed fine lenses on its front side and manufactured with the special technology of patented manufacturing process by Grapac Japan. By printing a special pattern on the underside of HALS® sheet, the perception of depth can be altered, and it is possible to achieve a 3D effects.

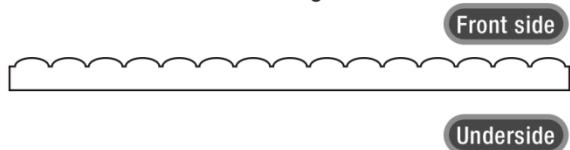
The 3D effect generated by HALS® does not require 3D glasses or observation methods (parallel method, cross-over method), and everyone can perceive the illusion of depth with unaided eyes. Unlike other technologies such as lenticular lenses, HALS® is special technology, which is able to smoothly perceive 3D image when you look it from any direction.

HALS® does not use any special types of 3D photography or 3D graphics software, and is a lens sheet you can use to create images with a sense of depth utilizing conventional printing techniques.

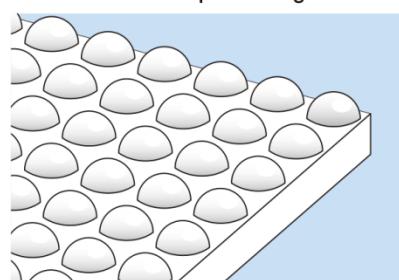
HALS® is a lens sheet for 3D printing.

HALS® is a micro lens sheet, with lens processing carried out on the surface of its base material (such as PP or PETG).

Lens sheet cross-section diagram



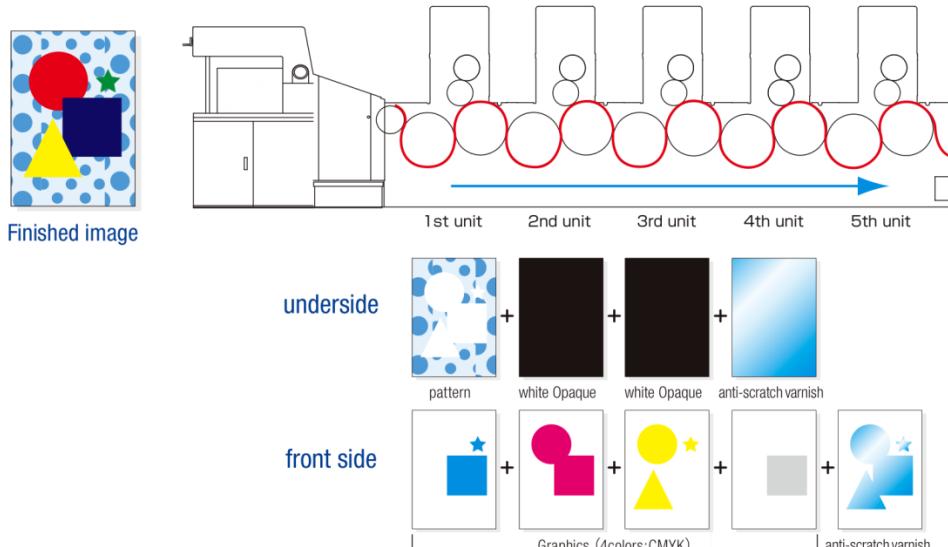
Lens sheet conceptual diagram



Printing with HALS® sheets

HALS® pattern (a special dotted pattern that produces the 3D effect) is printed on the smooth underside (non-lens surface), when we see it from the front side through the lens surface, a 3D pattern is perceived.

Color printing (4 color graphics) is carried out on the front side (lens surface).



Recommendable Condition for HALS® Sheet printing

1. Technical staff with appropriate know-how in printing techniques.
2. An offset printing press 28 inches or wider, with UV curing unit installed.
3. A CTP, which output resolution is 2,400 dpi or better (4,000 dpi or higher).
4. An experience in printing on transparent media.

Seeking a HALS® Business Partner

GRAPAC is seeking companies to work together with us in expanding business related to HALS® and 3D printing. Please utilize one of these business models according to your needs.

● Sale of HALS® Sheets for Printing

We are selling HALS® lens sheet to the companies, who can meet all the necessary requirements for HALS® sheet printing.

● HALS® Finished Product OEM

We are producing and selling HALS® finished products to the companies, who do not carry out manufacturing processes.

We are also able to offer printed HALS® Sheets that have not been postpress processed.

We are pleased to inform you that we can provide

HALS® STARTER PACK for your printing.

Please feel free to contact us if you would like to try.

HALS® Starter Pack CONTENTS :

•HALS® lens sheet •HALS® Quick manual • HALS® pattern data CD-ROM

