



# MAKING TECHNOLOGY POSSIBLE

COVI PRECISION A/S / KASTAGERVEJ 1 A / DK-2730 HERLEV /  
TLF. +45 71 990 440 / COVI@COVI.DK / WWW.COVI.DK

MICRO-PROCESSING FOR MEDICO-, FOOD AND HIGH-END ELECTRONICS INDUSTRY  
LASER CUTTING / LASER WELDING / LASER ENGRAVING / BENDING / PROTOTYPES /  
TOTAL SOLUTIONS



## INTRODUCTION TO COVI

**COVI PRECISION** is a European specialist in precision machining of small metal and plastic parts for quality-conscious collaborative partners. The company's head office is located on the outskirts of Copenhagen and was founded in 1963. Over time, COVI PRECISION has acquired a significant and wide specialist knowledge of several customer and business segments.

**COVI PRECISION** provides product development, serial deliveries and total solutions in laser cutting, laser welding and laser engraving in both metal and plastics, as well as associated processes in precision machining, assembly and supply chain services. Our business philosophy also comprises providing process optimising advice, as this ensures the most rational solutions. We are, thus able to provide the entire value chain as an integrated total solution providing the customers with a number of qualitative and financial advantages.

### DOCUMENTED QUALITY

At COVI PRECISION, quality assurance is a core service. Quality is something we plan, measure and document. Our longstanding experience within precision-machining laser technology has, thus resulted in longstanding customer relationships with several well-known companies within the medicinal, food and electronics businesses, all of whom make strict demands of quality assurance.

### PRECISION IN ALL STEPS OF THE PROCESS

Many orders are characterised by extremely high demands of precision and finish. We machine and manufacture small metal and plastic components for complex technical constructions. From assistance with development and prototypes to variable serial productions and serial productions of great volumes.

### THE MOST RECENT LASER TECHNOLOGY

At COVI PRECISION, we aim to ensure that all customers are provided with the most rational solution regardless of the complexity and scope of the assignment. In order to provide this, we have highly skilled and capable staff within laser and precision machining. With their expertise and experience, they deliver excellent workmanship and, moreover, operate the most recent laser technology.

### EXPERIENCE COVI

LASER CUTTING .....	4
LASER WELDING OF METAL .....	5
LASER WELDING OF PLASTIC .....	6
LASER ENGRAVING .....	7
PRECISION BENDING .....	8
TOTAL SOLUTIONS .....	9
QUALITY ASSURANCE.....	10
INDUSTRIES.....	11

# LASER CUTTING

WITH OUR LASER TECHNOLOGICAL EXPERTISE, YOU ENJOY GREAT PRECISION AND REPETITIVE ACCURACY



COVI laser cuts using primarily Fibre and Fibre/pulse YAG, a technology well-suited to the cutting of thin-gauge sheeting and metal foils and is able to laser-cut most metals with a beam diameter down to 30 μm. Which provides a completely clean cut.

Polymer foils are processed using CO2 laser cutting which prevents the material from fraying and counteracts burring around cuts. The technology is thus a good alternative to stamping and water cutting of polymer washers, membranes and filters which require great standards of cleanliness and precision.

COVI has great experience in the rotational cutting of precision- and needle tubes and works closely with renowned medico companies on the development

and production of filling needles, probes, needle tubes, stents and flexible tubes. Add to this our competences in bending small-gauge tubes and laser welding thin-gauge sheet products—processes which often form part of the manufacture of the above.

The technical advantages of COVI's laser-cutting technology are great precision, great repetitive accuracy, negligible burring and very negligible thermal impact (HAZ). Additionally, great flexibility in the production and low start-up costs are achieved, as well is the option of unmanned production. Thus, precision laser cutting by COVI is a qualitative and competitive alternative to ordinary laser cutting, stamping and etching.

# LASER WELDING OF METAL

LONGSTANDING EXPERIENCE AND BROAD COMPETENCES ENABLE US TO FULFIL THE CUSTOMER'S STRICT REQUIREMENTS FOR QUALITY AND FINISH.



COVI's welding technologies encompass a range of unique technical advantages compared to traditional welding, MIG/MAG-, TIG- and arc welding. With a beam diameter down to 50 μm, welding may be undertaken in areas that are difficult to access.

This technology enables rotational welding, XYZQ plane control and welding with Galvo-head (controlling the laser beam through specular technology), which means that welding of even very complex designs may be undertaken.

With laser welding carried out without the use of welding wire and with CAD/CAM-control, great precision and repetitive accuracy are ensured with a

minimal thermal impact in the weld zone.

All weldable metals may be welded using laser and the precise control of the technology makes it suitable for the welding of materials of low melting point (e.g. aluminium), large microstructural porosity (e.g. sintered metal) as well as welding close to thermosensitive components (e.g. electronics).

Welding may be carried out at distances of up to 200 mm, which means that welds that are difficult to access, such as welds in holes or on the inside of tubes, may be carried out.



# LASER WELDING OF PLASTIC

WITH LASER WELDING IN PLASTIC GREAT PRECISION, HIGH SPEED AND MINIMAL THERMAL IMPACT IS ACHIEVED.



Most thermoplastics/TPUs are basically suited for laser welding and with the addition of the right additives, they may be made weldable which means that the advantages of the speed, precision and safety of laser technology may be enjoyed.

Laser welding is carried out without the introduction of foreign material and without any mechanical impact to products and equipment. Moreover, thermal impact is minimal, and it is, therefore, very gentle on the polymer structure, appearance and strength of the product. Thus, welding may be

carried out near thermally sensitive components without the product suffering from vibration stress and marks which may be the case when ultrasound is employed.

At COVI, we employ Galvo-head welding (controlling the beam through specular technology) which means that welding of complex designs may be carried out with great precision and at high speed.

Laser welding is a strong and competitive alternative to ultrasound welding, hot-iron welding and bonding of plastics.

# LASER ENGRAVING

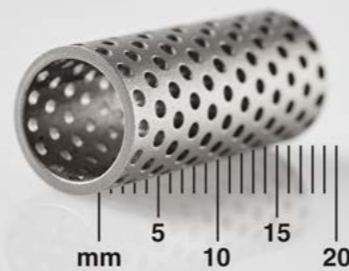
HIGHLY TECHNICAL LASER ENGRAVING IS A LONGSTANDING CORE COMPETENCE.



COVI can carry out most types of engraving. The company owns a broad range of equipment and has longstanding experience. This enables us to assess and undertake many types of engraving.

From the simple to the complex. From the special assignment to the serial production.

COVI undertakes engraving in most metals and most types of plastic and largely takes on the role of subcontractor to a number of leading medico companies, high-end electronics companies and many others who enjoy having a professional and serious engraving partner.



# PRECISION BENDING

REGARDLESS OF WHETHER BENDING IS MANUAL OR AUTOMATED, QUALITY AND EFFICIENCY ARE GIVEN HIGH PRIORITY.



As one of few companies, Covi undertakes precision bending of smaller components in both large and small series. This includes the bending of sheet metal parts, tubes and needle points.

From the development phase via prototypes, special assignments and serial production in various numbers.

We work with both manual and digitally automated solutions where flexibility and adaptability are easily achieved.

At COVI, we often produce our own tools and are thus able to reduce the start-up time and costs and, thus, develop prototypes efficiently.

We primarily offer bending as a service in connection with the manufacture of products which have been laser cut and it is, thus an integral and strong supplement to the total performance of an assignment.

# TOTAL SOLUTIONS

AN OPTIMUM MIX OF EXPERIENCE, COMPETENCES, TECHNOLOGIES AND SERVICES ENSURES EFFICIENT SOLUTIONS.



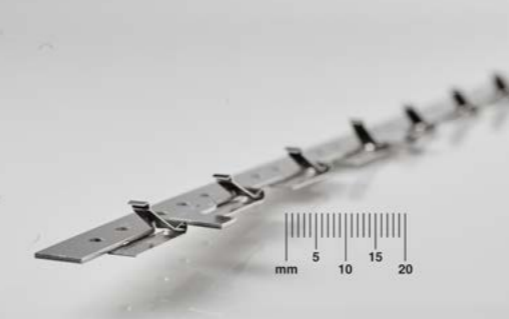
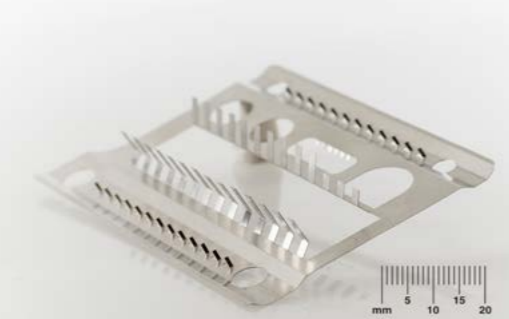
When a complex development and production process is carried out through several suppliers, the end product often ends up being more expensive than necessary and extends the time-to-market. COVI's business philosophy is to optimise the customer's value chain as much as possible.

Our experience is that customers thus acquire the best possible value – both technically, qualitatively and financially. COVI's total solutions have proven a success as most customers draw on more of our competences – and do so for many years.

In collaboration with our customer, we create an individualised mix of services which result in safe

and efficient processes which, in turn, optimise quality, timing and finances.

If you would also like to learn more about the advantages of a customised product – then please contact us and let us enter into a dialogue on our total solutions. Based on a thorough briefing, we will proactively form a view on your entire assignment from the development of a prototype to serial production with supply chain and logistics and will present to you a total solution which creates optimum value for you.



## QUALITY ASSURANCE



Quality assurance is a central and efficient tool which forms part of our strategy to achieve the best optimisation of our processes and; moreover, ensures that we continue to develop our production machinery, our organisation and the competences of our employees. Documented quality assurance has been introduced in all departments, from first contact with the customer to the supply of the order.

We manufacture many different, technical, tailor-made products and projects for different industries and are therefore able to fulfil individual requirements in our production and quality assurance.

COVI PRECISION has been ISO 9001:2015-certified by Bureau Veritas Certification Denmark A/S for laser cutting, laser welding, engraving and the processing of customer-specific assignments in metal and composite materials.

Our quality assurance is; moreover, managed according to the requirements of ISO 13485 and ISO 14001 (Compliance). Covi can offer the following – depending on the customer's desires and requirements:

- PPAP (Production Part Approval Process)
- MSA analysis (Gauge R&R)
- Process analysis (Cp & Cpk)
- Sample analysis in acc. ISO 2859 (Pp & Ppk)
- COC and Measurement report
- Validation

## INDUSTRIES

### MEDICO & DENTAL

Our customers are found amongst the world's leading medico companies, with whom we have collaborated for several decades. Not many industries are met with stricter requirements for quality, hygiene, traceability and documentation than the medico industry – and, for that reason, COVI PRECISION is the logical choice of supplier for this industry. The medico industry's strict requirements for quality has been a contributing factor to the development of our competences and has been an influencing factor in the growth of our company since its establishment.

The deliveries comprise everything from processing machinery to component development for use in in-line as well as subcontractor production.

COVI PRECISION assists with everything from the development of prototypes to the manufacture of 0-series and delivers serial production of components for the production of medico-technical equipment and medical consumables as well as cochlear and other component types for implant surgery.

### ELECTRONICS & APPARATUSES

The electronics industry is characterised by the requirement for the production of many prototypes for testing in connection with the development of new products. In that type of process, where components need to be adjusted and remedied on an ongoing basis and where quick delivery and time-to-market are decisive parameters, COVI PRECISION is an optimum collaborative partner. Our organisation is characterised by quick and flexible operations and, in a close and proactive collaboration with our customers, we contribute with input and optimisations to the design which provides the foundation of an efficient and financially sound production. Our services and experience with the electronics industry range from laser engraving and surface processing of design products to the production of components for high-end hearing aids, microphones, mobile telephones and headset, labelling of industrial components and much more. As the functions are often either optical or audiological in character, the demands on precision and documented uniform production and quality assurance are important.

### FOOD

COVI PRECISION has many years of experience in servicing and manufacturing products for the food industry and has supplied components for, amongst others, components for analytical equipment, dosing and filling machines with hygiene-optimised surfaces, component parts in various materials and geometric designs. Total solutions such as assembled units and labelling for traceability are also services often provided.

Like the medico industry, the food industry is also characterised by strict requirements for exacting tolerances and particular focus on traceability and hygiene. To meet the very strict requirements of the food industry for precision and repetitive accuracy, we employ CAD/CAM-controlled laser processing. By employing laser technology, we avoid introducing foreign hygiene-reducing materials, such as soldering pewter and, moreover, avoid introducing any other mechanical or thermal influence on the sensitive electronics of the product.