VALUE IN PROCESS

SOCO #1 Issue - February 2022

REPLACING SAWS WITH TUBE LASERS

ADD FLEXIBILITY TO YOUR PROJECTS

SOCO

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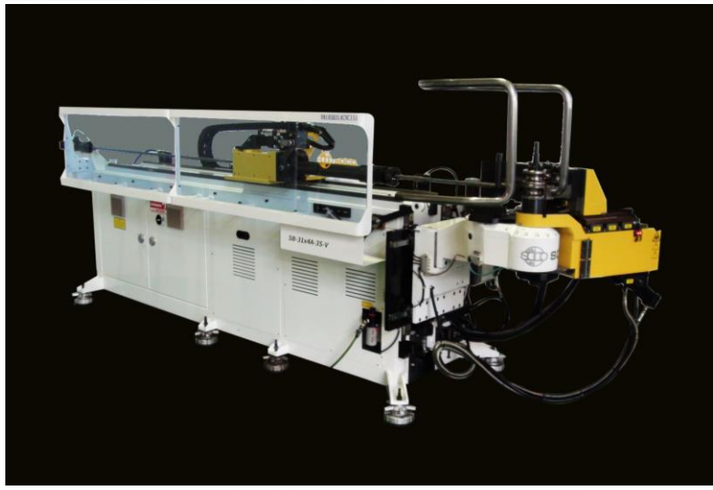

LETTER FROM THE CEO

Dear SOCO Partners,

It is great pride that we bring you the first edition of SOCO's digital magazine "Value in Process", which is also our main theme for the next few years. We firmly believe that as a company, our core strength is bringing products that create unique and added value for our partners and customers, allowing us to continuously grow with them.

In this edition, you will find articles about industries relevant to our field, as well as success stories from our customers, new exciting machine models and automation cells, and of course a bit about the people that make SOCO the company that it is today.

We live in unprecedented times, with daily challenges brought by COVID-19, as well as global disruptions from supply chains to shipping routes. Nevertheless, we face this upcoming year with great hope that the world economy will gradually adapt to this "new normal", and many new business opportunities will rise again.

As always, we thank you for your continuous support and wish you great health and success.

Best Regards,

Kyle Lo,
CEO and Managing Director

SOCO

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INDUSTRY NEWS

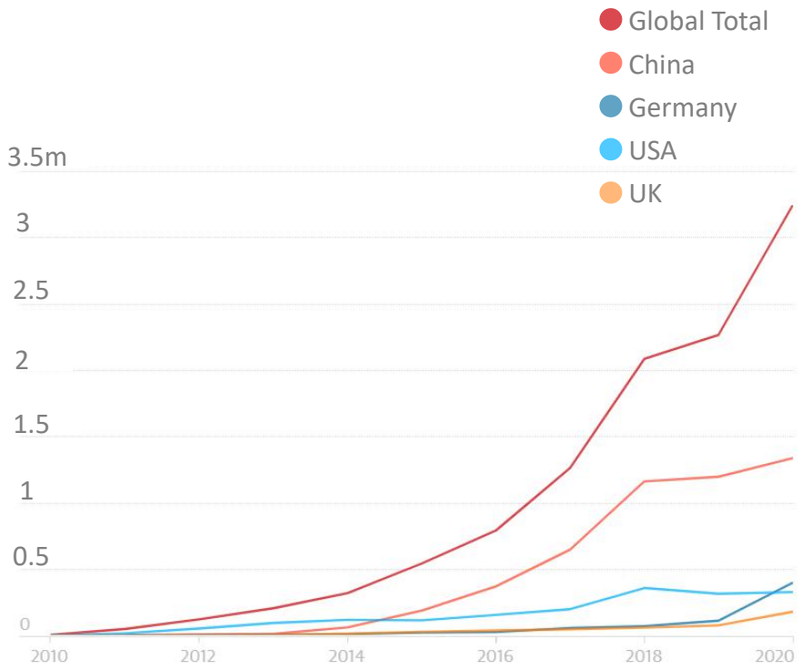
FEBRUARY 2022

EV Sales Increase

Global sales of electric cars have increased in the last few years. In 2020, sales rose by 43%, despite overall car sales slumping by a fifth during the coronavirus pandemic.

In H1 2021 only, 2,65 million new EVs were sold, an increase of +168 % compared to 2020. By 2021, all regions and most countries witnessed strong increases in EV sales.

Growth rates were extraordinary during the first 6 months of 2021, reaching 157 % in Europe, 197 % in China, 166 % in the USA, and 95 % in the remaining markets.



The Light Weighting Trend

Due to gas emission regulations across the globe, automakers are reducing weight and vehicle structure mass to improve battery life and driving range.

To achieve higher performance and driving range, the industry has been moving towards a "Higher Strength - Light Weighting" trend. As the weight of the materials is reduced, strength and safety requirements are higher. Since the materials used are higher in tensile strength, the capabilities of the machines to produce these parts will need to increase as well.

Especially in the EV industry, fabricators need to use exacting and reliable machines that can cut and form higher tensile strength materials, prevent tube deformation and rupture, and achieve higher requirements.

SOCO is already helping car makers around the world to produce parts for EVs in High Strength Materials.

What Are the Challenges in EV Fabrication?

For lightweight reasons, electric car fabricators work with harder and thinner materials, so they face different challenges. Although these materials are harder and more resistant, they are also prone to over-thinning and wrinkling. Besides, automakers need also to produce unconventional shapes and meet high cosmetic and safety requirements.

While conventional methods of tube cutting work well, **laser technology** is more efficient, reliable and cost-effective, and can satisfy the growing demand of manufacturing and production. As saw blades have a lower performance in cutting harder materials, the performance of a tube laser excels in both speed and quality. This is the reason why a lot of tubular parts manufacturers are switching from sawing to lasers.

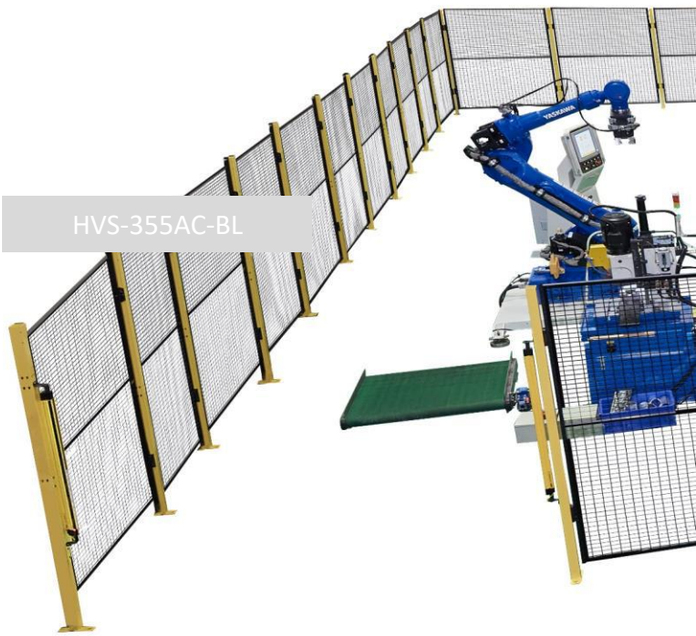
SOCO Left & Right Tube Benders and Booster Benders are the perfect combinations to build Electric Vehicles parts as they prevent any distortion, wrinkling, thinning while giving great flexibility to work on complex projects.

Read more about SOCO RoundCut-100

Electric Vehicles use High Tensile Strength Materials for different parts, such as Stabilizer Tubes, Impact beams, Car Seats, and Steering Systems. Special Tubular Profiles are used to build the Roof, Dashboard and Chassis parts.

HANDLING ROBOT

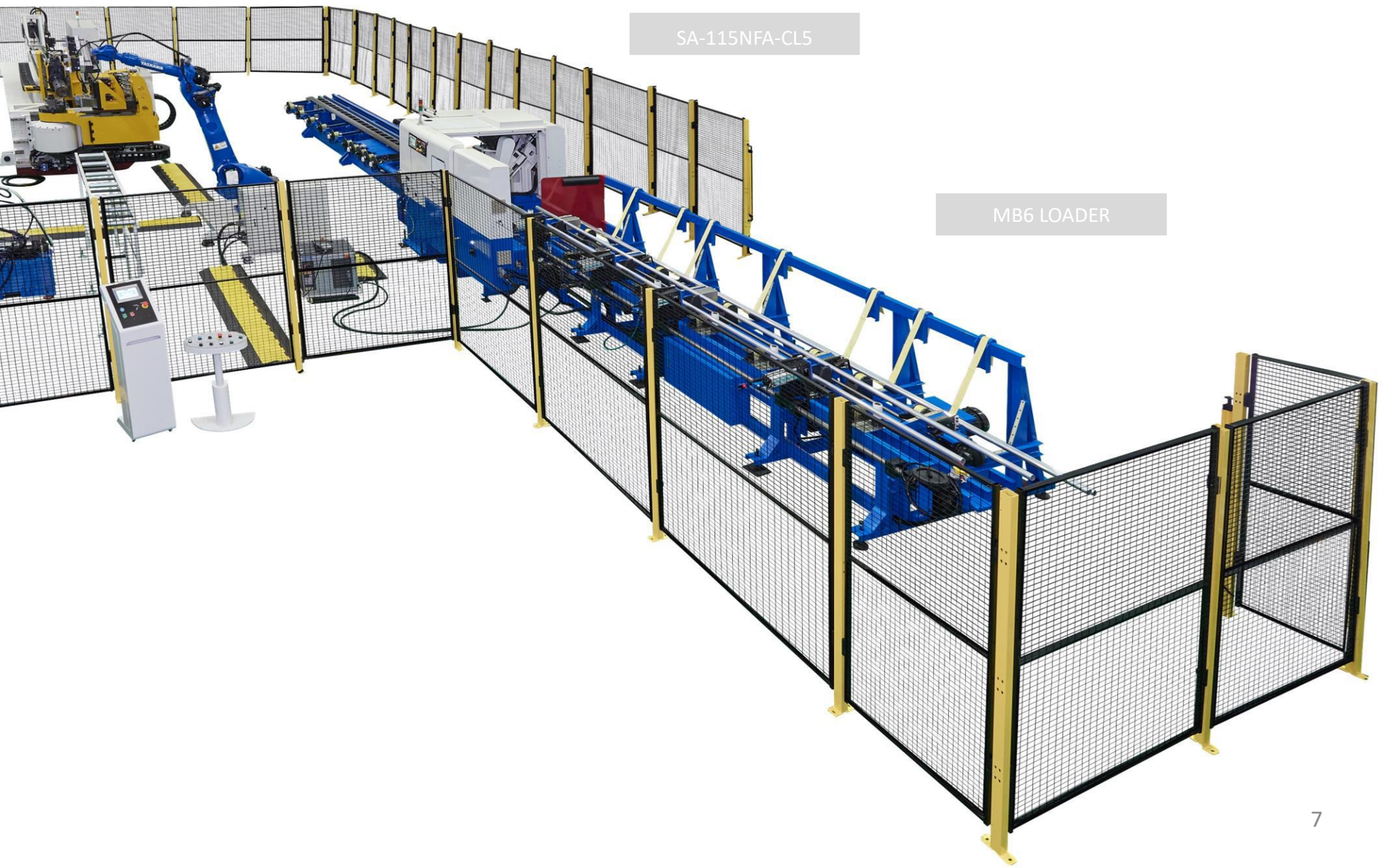
HVS-355AC-BL



Read how an automotive manufacturer decided to produce the next generation of lightweight stabilizers with SOCO machines.

Towards Smart Factories

SOCO machines are IoT devices that support the interconnection required in today's smart factories. Besides providing the latest tube bending and cutting technology and upgrading production lines, SOCO helps fabricators design parts and monitor their production lines. The CNC tube benders are equipped with a bending and collision simulation software that replicates the production process, and its Tube Lasers are equipped with an extensive database of cutting data for hundreds of different materials. The machines are also interconnected so it's possible to collect and exchange data of the production status, produce analysis reports, control the production process, and receive live technical support from any internet-supported location.



REPLACING SAWS WITH TUBE LASERS

NEW TRENDS IN THE TUBE MANUFACTURING INDUSTRY

Mr. Bai is a manufacturer of tubular automotive components based in Asia. He has also been SOCO's client for 30 years: 10+ sets of SOCO's sawing machines have been working in his factory over this period, until this year. In fact, Mr. Bai decided that 2021 would be the year to make a major upgrade and enjoy the great benefits of laser technology, so he decided to employ his first SOCO's tube laser cutting machine at his factory.

The Challenges of Tube Materials Fabricators in the Automotive Industry

Due to gas emission regulations across the globe, automakers are reducing weight and vehicle structure mass to improve fuel economy, with several advanced materials being used. Materials such as high-strength steels, Ultra-High-Strength Steels, Aluminum (Al) alloys, Magnesium (Mg) alloys, and composites are lighter and more resistant. These materials are a challenge for metal fabricators because they are harder to cut: the harder the materials, the slower the sawing machine and shorter the saw blade life.

Large volumes and reduced production speed often give the biggest headaches to metal manufacturers. To deliver the orders on time, Mr. Bai's factory had to add another shift, and due to a global shortage of skilled labor, he had to constantly coordinate his team to make sure that they could cover all the shifts and satisfy his customers.

Besides a decreased production, sawing machines have another downside. A saw blade can process up to 1,000 cuts on Advanced High-Strength Steel (AHSS), after which it needs to be replaced and resharpened. This translates into high running costs for manufacturers. The need to cut down costs while producing high-quality parts is the reason why metal manufacturers, like Mr. Bai, are replacing sawing machines with laser cutting machines such as the SLT-RoundCut Tube Laser.

Laser technology is more efficient than traditional cutting methods. It is reliable, cost-effective, and can satisfy the growing demand of manufacturing and production.

As saw blade have a lower performance in cutting harder materials, the performance of a tube laser excels in both speed and quality. This is the reason why a lot of tubular parts manufacturers are switching from sawing to lasers.

ADVANTAGES OF LASER CUTTING MACHINES OVER SAWING MACHINES

Cut More of Everything

With superior performance for various materials, SOCO's tube lasers can cut parts as short as 2 mm (less than 1/10"). With a laser beam spot as small as 0.1 mm, there is also less wastage per cut, as opposed to the 1~3 mm material loss caused by different blade thicknesses, resulting in more pieces produced per stock material.

Precision and Accuracy

By using fiber optics and a high-performance cutting head to guide and control the positioning of the laser beam, a precise cut is produced without the issues related to saw blade run-out and straightness.

No Deformation or Damage

Cutting finish quality is extremely important for tube fabricators. Traditional cutting methods can damage the material surrounding the cut: clamping and metal chips can damage the surface and deform the tubes. This doesn't happen with laser cutters, because there is no direct contact with the tube, and the cutting process doesn't produce metal chips: parts are nearly flawless and usually do not need to be deburred or chamfered after the cutting.

Lower Cost Per Cut

As saw blades need to be replaced, resharpened, and recoated, they are a considerable part of production costs. In addition, manufacturers need to manage a stock of blades for different types by applications and tube sizes, which requires management and floor space. Aside from cutting gases and electric power, there are virtually no other consumables.

This means that management costs, maintenance costs, and downtime are all significantly reduced. All these factors contribute to a lower cost per part produced.

Automation

Laser cutting machines can be easily integrated with other SOCO so that factories can achieve different levels of automation and increase productivity.

Lower Maintenance Costs: As mentioned above, laser technology is a contactless process: only the laser beam gets in contact with the material that needs to be cut. As a result, there is no friction that can cause tool wear-out. On the other side, saws need periodic maintenance: to make high-quality cuts, the blades need to be resharpened often and eventually replaced.

SOCO SLT-ROUNDCUT, A TUBE LASER LIKE NO OTHER

While there are various types of tube lasers, the SOCO SLT-RoundCut series is the first of its kind in the world. Dedicated to straight cutting and with the possibility to easily connect to other processes, it is one of SOCO's most successful lasers among tube fabricators. Equipped with 4 Servo Axis and a 1 kW Fiber Laser (other powers are optional), automatic loader, and with outputs as short as 2 mm and up to 4.5 meters, this series of lasers offers superior performance for all types of tubes.

The SLT-RoundCut series can also be integrated into other SOCO's standard solutions, such as deburring, chamfering, washing for spatter removal, length measuring, and stacking.

In the last few years, the tube manufacturing industry has witnessed a clear trend: the replacement of saws with tube laser cutting systems. As Mr. Bai is taking the technological leap from saws to tube lasers, many other tube fabricators are preparing – if they haven't done it yet - for this change as well. SOCO offers one of the most complete product lines for Tube Lasers, with over 15 different models for a wide range of tubes and sheet metal, in both 2D and 3D Cutting, ensuring that there is a dedicated solution for every type of application.

A CLEAR TREND IN THE MANUFACTURING INDUSTRY

As such, not only are tube lasers providing a new edge for manufacturers to remain competitive in their present segments but have also opened doors to many new industries and applications.

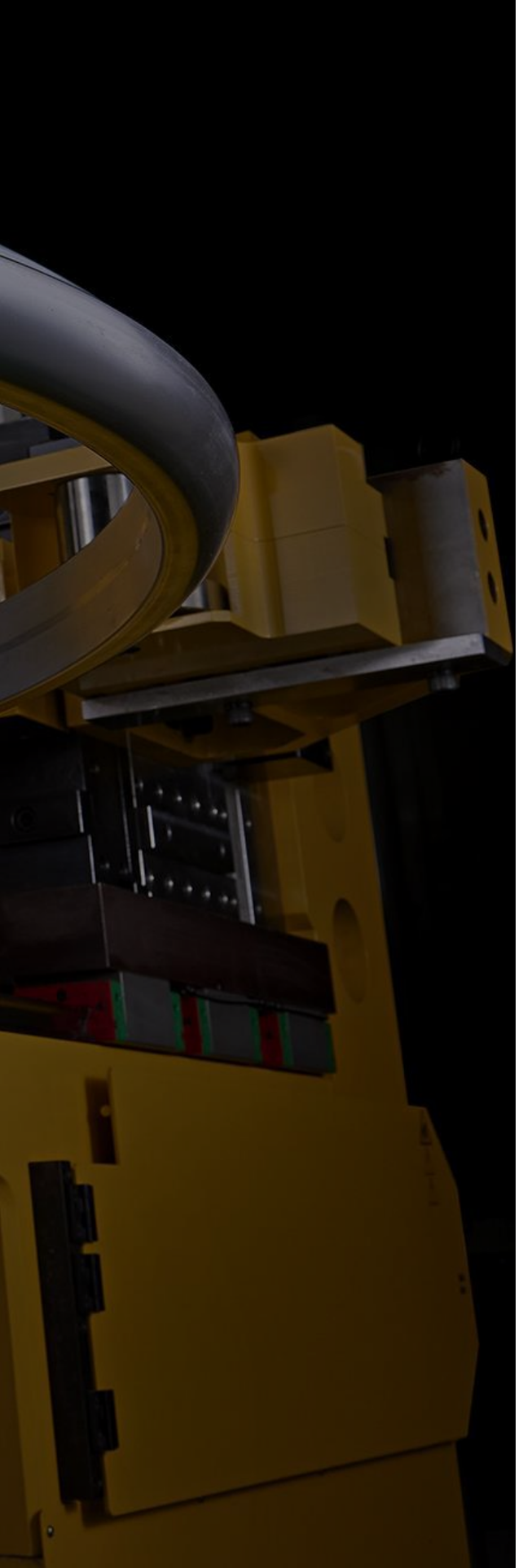
If you need more information about SLT-RoundCut please follow the dedicated page here and send us an inquiry.

Watch SOCO laser cutting and chamfering automation cell.

SOLUTIONS FOR THE HEAVY INDUSTRY

SAFETY & COMFORT IN THE HARSHEST ENVIRONMENTS

In the most demanding environments, safety is the top priority.
From high rise buildings to government projects, from power plants to road maintenance, and in harvest fields to ports and warehouses, heavy duty equipment is always present.



V SERIES: PROFILE BENDING

SOCO EXPERTISE IN CABIN & CHASSIS FRAMES

The SOCO CNC V series brings the optimal tube bending power and accuracy solutions to the automotive, trucks, buses, boilers, ship building and other heavy industries.

With multiple stacks, 4~11 individually programmable axes and SOCO i2 Controls, this series of tube benders has full control of deformation, flatness and material twist.

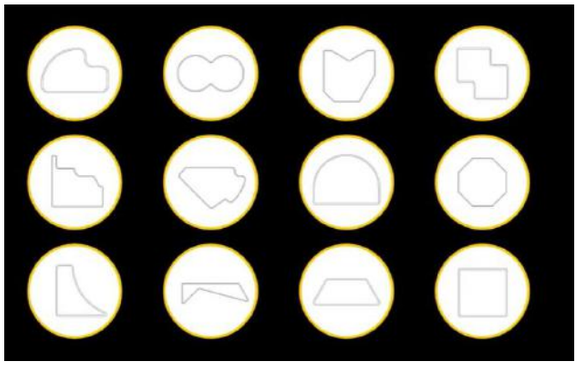
Standard models of the V series come High Power Boosting Carriages and Torque Control, as well as Roll + Draw Bending Features

Options:

- SOCO Production Reports
- SOCO CAD-Reader
- SOCO simulation and collision detection software
- MES and CMM Connectivity

1D + DRAW + ROLL BENDING TECHNOLOGIES

The V Series can process different tubes and profile shapes



Watch how to build a cabin frame with SOCO.

ADD FLEXIBILITY TO YOUR PROJECTS

REALIZE COMPLEX PARTS WITH NO INTERFERENCE

SOCO has recently added to its product line **SB-31X4A-3SV**, a tube bender designed for the furniture industry and the production of complex parts.

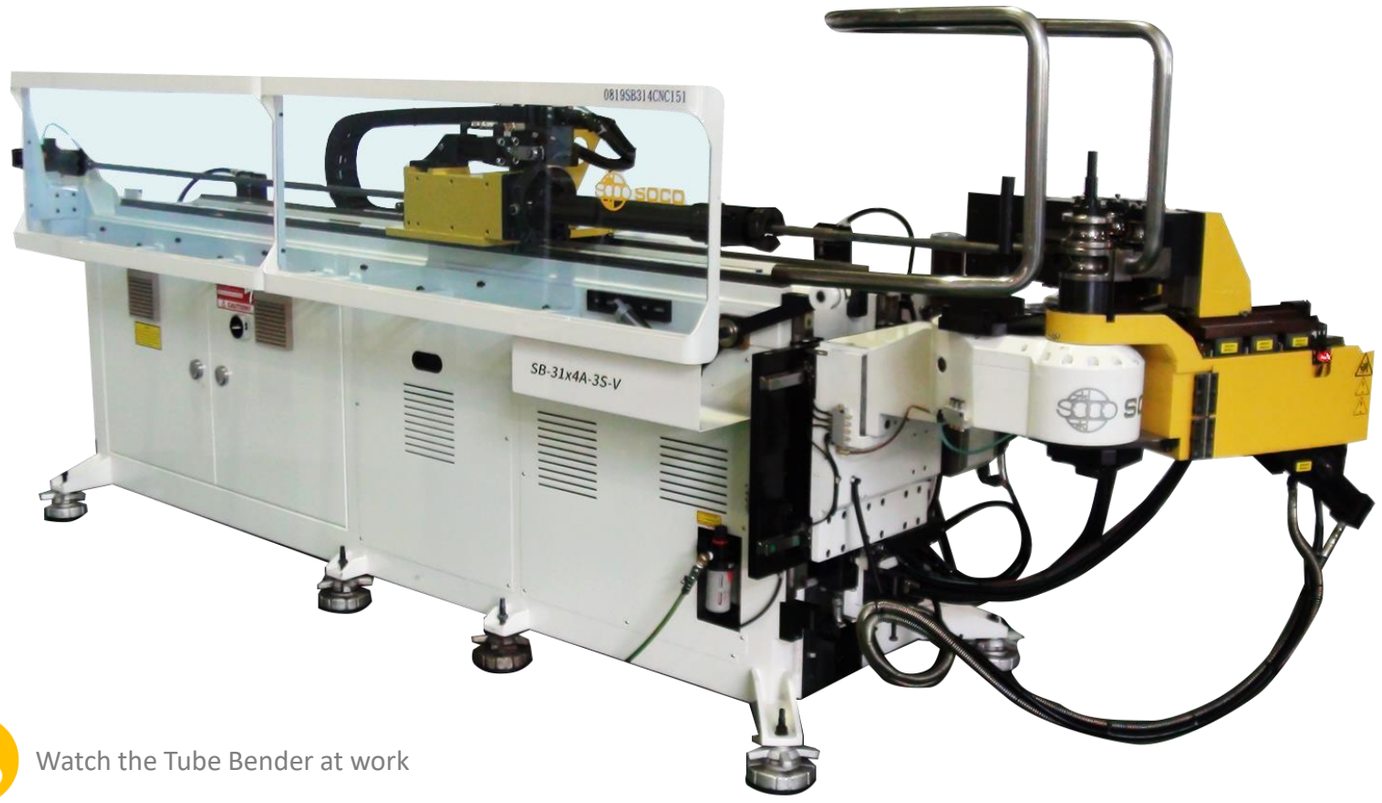
SOCO SB-31X4A-3S-V
FOR FURNITURE AND COMPLEX PARTS

In the furniture industry, typically, long tubes are bent into complex shapes. Tube benders that produce multi-bend components must have maximum clearance areas to avoid collisions during bending. This is why the SOCO engineering team introduced a new design for SB-31X4A-3SV. The dimensions of the bending heads are reduced by 40% so that the interference between tube and machine parts is minimal.

The machine can execute shapes that were previously not possible with only one bending direction.

The SB-31X4A-3SV is equipped with 4 electric axes and 3 bending stacks. This bender brings a capacity for pipe and tube bending up to 1.18-inch / 30 mm OD in a variety of metals including mild steel, stainless steel, aluminum, brass, copper, and titanium.

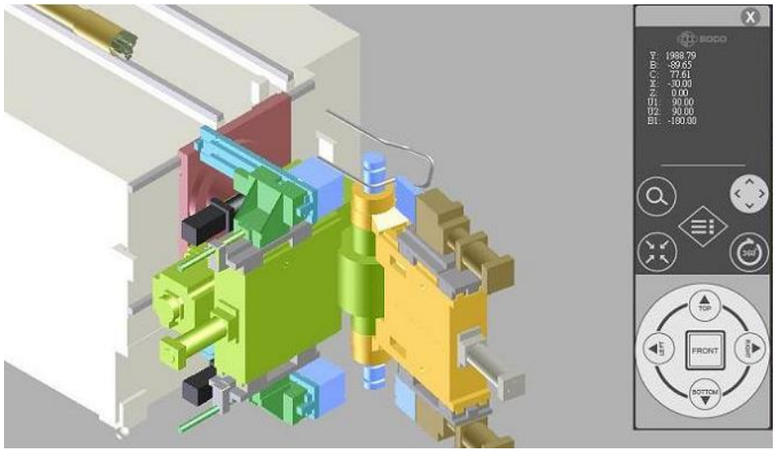
The V Series of SOCO CNC tube benders combines Draw, Roll, and 1D Bending technology. This combination allows 2~3 different fixed radii and multiple large roll bending radii in a single part, as well as a programmable carriage boost for CLR = 1D Bending.

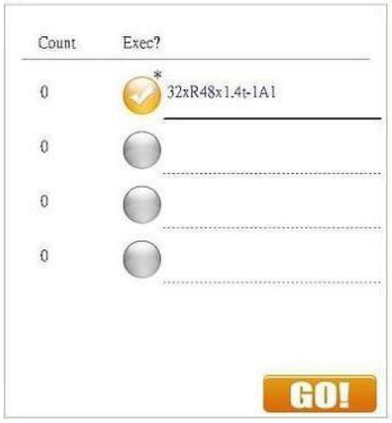


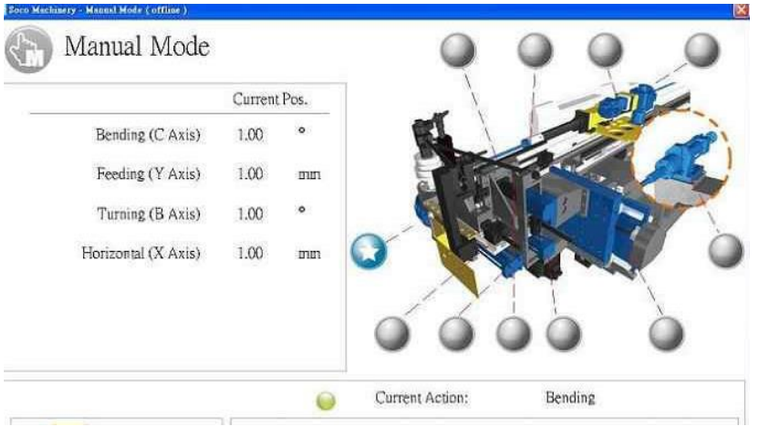
Watch the Tube Bender at work

THE INTERFERENCE BETWEEN MATERIAL AND BENDING HEADS IS MINIMAL, SO IT IS POSSIBLE TO FABRICATE COMPLEX MULTI-BEND PARTS.

As all SOCO machines, SB-31X4A-3SV can be monitored and operated by i2 Controls. Our in-house developed software allows fabricators to design tubular parts from both scratch and CAD files as well as simulate the cutting and bending process in each step.







SB-31x4A-3SV SPECS

Max. Steel Tube O.D. (mm)	Ø30x2.0txCLR1.5D
Max. Stainless Steel Tube O.D. (mm)	Ø25.4x1.6txCLR1.5D
Max. Roll Bend Capacity (Steel) (mm)	Ø30x1.0txCLR8D (No Mandrel)
Die Radius Difference (R1-R2)	Max. 38 mm
Max. Feeding Stroke Length	2300 mm
Max. Tube Length With Mandrel	3170 mm
Max. Bending Radius	150 mm
Max. Bending Angle	190°
Precision (Bending, Rotation, Feeding)	± 0.1°

Read the full functions and specifications of V Series Tube Benders and SB-31X4A-3SV.

SOCO i2Software Bending Simulator. Read all the functions about it here.

PERFECTLY SYNCHRONIZED AUTOMATION

SMOOTH PROCESSES, SHORT CYCLE TIME

Like many tube manufacturers, AMN is investing in automation, aiming at higher production rates, reduced lead times, better product quality, and improved safety.

AMN, a large fabricator of automotive parts in South America, wants to implement advanced bending processes to make car seating components. Their goal is to cut down cycle times and run the production for three shifts with one operator.

For this case, SOCO designed an automation cell for bending and end forming multiple types of headrests, optimizing all processes to reach high output and quality as requested.

Our engineers worked meticulously to enhance and synchronize every motion of the bending process and ensure smooth operations.

SB-22x8A-MR-V-U

SOCO's Tube Bender allows for Left + Right bending in the same cycle. The bending machine is provided with Draw, Roll, and Booster Bending, Multi-stacks and Multi-Radius. Equipped with 8 Electric Servo Controlled Axes, the tube bender is also equipped with SOCO DGT technology – Direct Gear Transmission for high speed and accuracy.

SOCO's i2 Controls + IRMS bending software and the touch screen make it easier to produce new parts and control the manufacturing process.

The Process

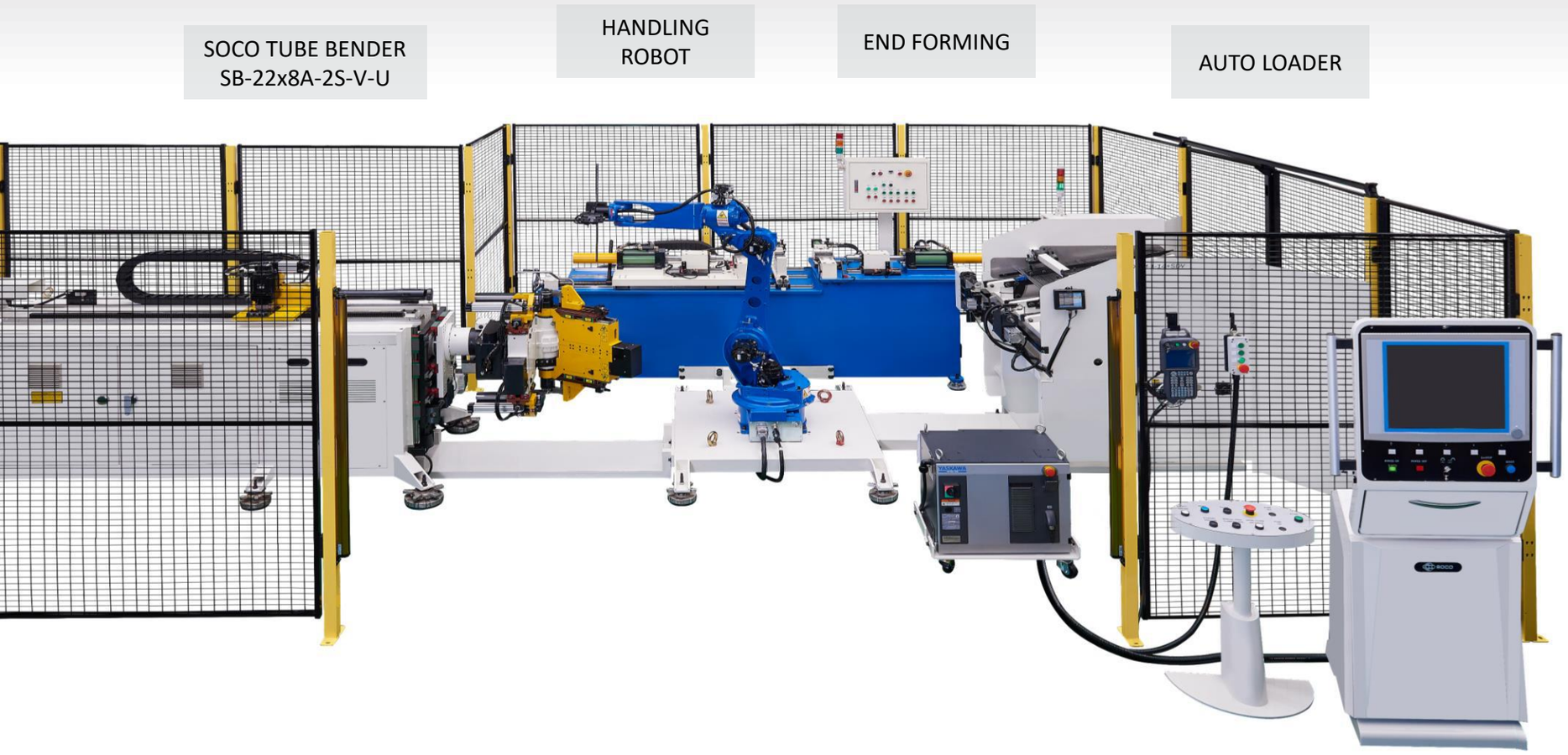
The cell integrates SOCO Automatic Loader, handling robot, end forming machine, the tube bender SB-22x8A-MR-V-U, and the seam detector.

The robot picks the tube from the Automatic Loader and feeds it into the end-forming machine. Once the part is processed, the robot passes it to the tube bender. The part is then loaded on the dimensional measuring station where the camera seam detector accepts the parts that meet the requirements. The robot then unloads the part.

To speed up cycle times, the robot handles two parts at the same time, at two different stages of the forming process: while one part is being processed by the tube bender, the other part is placed on the measuring station and unloaded.

The cycle time is drastically reduced thanks to the dual-direction bending technology of the SOCO tube bender. SB-22x8A-MR-V-U can process six-bend parts in less than 29 seconds and offers flexibility to produce headrests in different shapes.

The operator can monitor the automation cell from outside the safety fencing using an IPC equipped with SOCO software and IRMS.



SB-22x8A-2S-V-U

- All-electric Left & Right Tube Bender
- High speed and Environmentally friendly
- Draw and Roll (Large Radius) bending
- 1D Bending
- DGT - Direct Gear Transmission
- Bending Interference and Collision Simulator

SB-22x8A-2S-V-U produces parts for many industries. Besides car seating, this model has been used to make headrests, brake lines, and HVAC.

This tube bender can be integrated into other SOCO machines – like sawing, laser cutting, end forming – to create automated production lines.

SOCO's superior and precise technology ensures high degrees of automation, the highest output, and quality for large-scale productions.

The Key to Our Success

Our service team is surely one of our strengths.

For each project, we appoint a dedicated customer service engineer, who is the point of communication between SOCO and our client.

SOCO engineers will spend two weeks on the client site to install the automation system and to train the operators to use the machine and do maintenance work. Our after-sales team is available to give remote support, while SOCO local agents, which are present in more than 80 countries, can get directly in contact with our clients.

Surface finished quality ✓
Hourly output requirements ✓
Automation speed ✓
Safety standards ✓

Watch SB-22x8A-2S-V-U in action.

TIMTOS 2022

THE TAIPEI LONG-AWAITED EVENT

21 – 26 of February 2022, Taipei

When: February 21 (Mon.) - February 26 (Fri.), 2022
Times: from 9:30AM to 5:00PM (Last day until 4:00PM)
Venue: Taipei Nanggang Exhibition Center, Hall 1, booth #K0302
Website: [TIMTOS x TMTS 2022]

Taiwan’s largest machine tool show will be held in Taipei from February 21 to 26, 2022, with 900+ exhibitors and 5,200 booths.

TIMTOS is one of the largest trade shows in Taiwan as well as one of the most significant events for the global machine tool industry.

At the exhibition, we will present our leading technology in the areas of laser cutting, tube bending, software, and services. Come to meet us at our booth, where you’ll be able to see our machines at work.

SLS-3015-Linear: the first all-linear sheet metal laser cutting machine made in Taiwan
SLT-102-Fiber: a perfect tube laser for cutting a wide range of tubes in different materials
SB-32x7A-2S-V-U: all-electric left and right tube bender equipped with handling robots
SA-85NCE-Multi: high-speed automatic tube cutting line with the ability to cut up to 4 tubes simultaneously

We will also dedicate our attention to automation of processes and smart factory management.
We invite you to come to visit us at booth #K0302 and take the opportunity to learn about our latest innovations and technology from SOCO specialists.

SOCO PEOPLE

COMING BACK TO SOCO AFTER RETIREMENT

When Mr. Zhong started his job as a machinist at SOCO about 40 years ago, the factory counted only 35 employees. SOCO was a small factory specializing in saws and metal cutting machines in Central Taiwan. Since then, many things changed, in Zhong's life and at SOCO. While he was expanding his family – getting married and waiting for the arrival of the first child – the factory started its development and globalization.

40 Years of Experience

Like many SOCO employees, Mr. Zhong has made a lasting impact. He retired after many years of working at SOCO as a machinist, but his retirement life didn't last long, since after a few months he decided to come back to the factory.

“I am happy here. I have a stable income, nice colleagues. It's a pleasant routine”.

Over the years Zhong acquired a deep knowledge of SOCO's machines, and he is considered the number one of the machinery-assembly department. He can quickly identify the problems machines have or may have. His practical approach and problem-solving skills are of great value to SOCO, especially when it is time to test and optimize our tube benders and meet customers' requirements.
Mr. Zhong's experience is a significant resource to us as it helps give continuity to our work. Newcomers can rely on him: he is seen as a mentor that can transmit his expertise to colleagues.

Why Come Back To SOCO?

Zhong preferred employment at SOCO to retirement. Why? How can we keep our staff happy, motivated, and proud of what they do?

At SOCO we aim to create a safe, healthy, and positive workplace where a good balance between work and private life is a priority. The different departments work closely together to find better solutions to the problems we encounter.

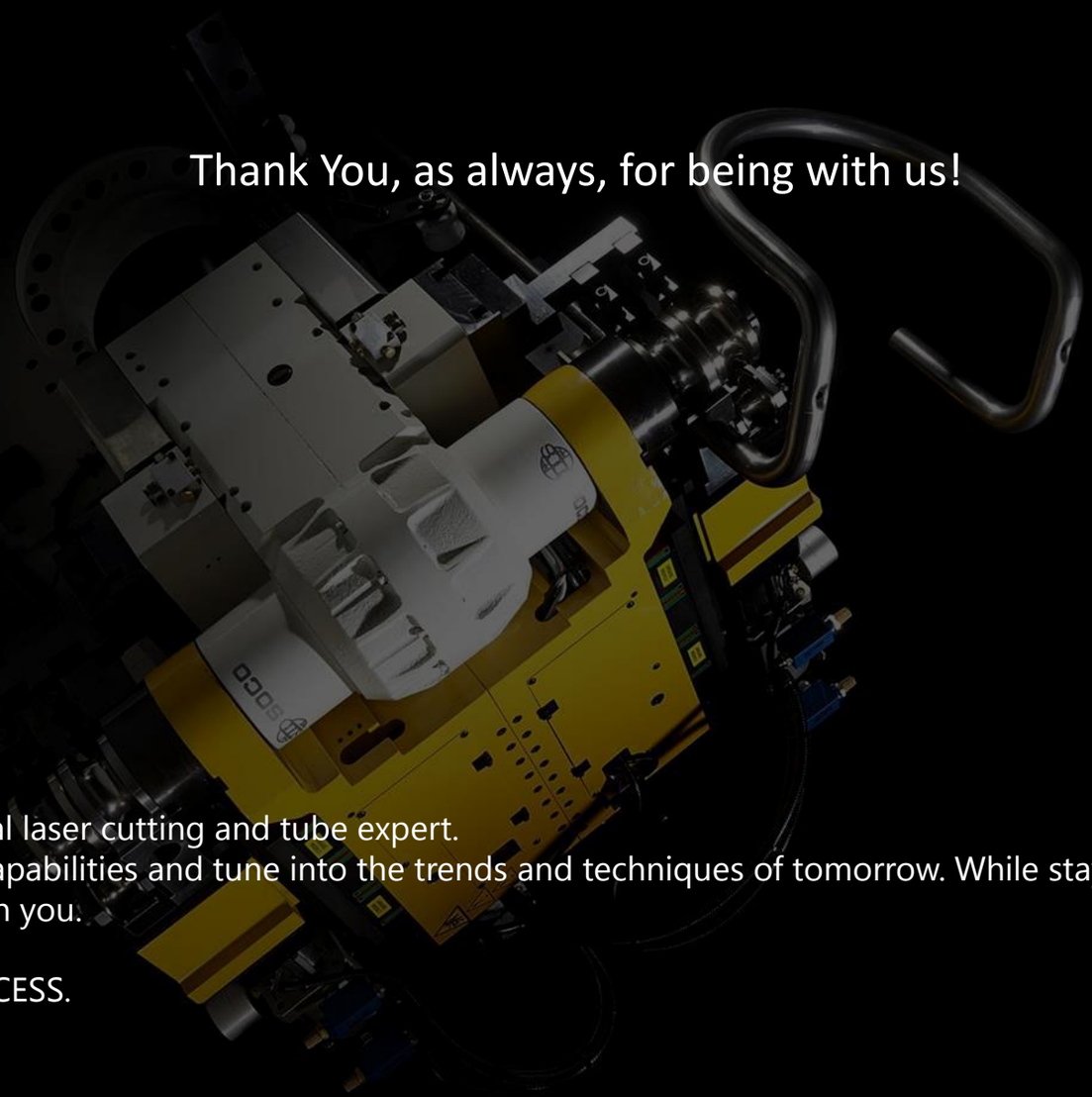
“I like my colleagues. There is always time for a good laugh. Problems can always be solved", says Mr. Zhong. “Working at SOCO has been – and it still is – my life, and I consider it as a family: we grew together.”

Staff facilities – canteen, sleeping room, sports center, garden – are open to all employees during break times, and there is no stress at work because everyone does their best, knowing that their efforts will be awarded.

Besides a good daily life, SOCO supports their staff in building their future with welfare, pension plans, and family packages. SOCO offers also housing support with employee dormitory, discounted price for renting or buying apartments with 0% interest.

It takes a team of talented and motivated workers to convey the brand values to each machine that we produce. Their happiness at work is our formula to succeed.

Thank You, as always, for being with us!



We are SOCO. A global laser cutting and tube expert.
We push innovative capabilities and tune into the trends and techniques of tomorrow. While staying humble, caring, and focused on you.

SOCO. VALUE IN PROCESS.

SOCO

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