siconnex

siconnex
customized solutions

Welcome to the FUTURE.
Welcome to Siconnex.

SICONNEX ICONS

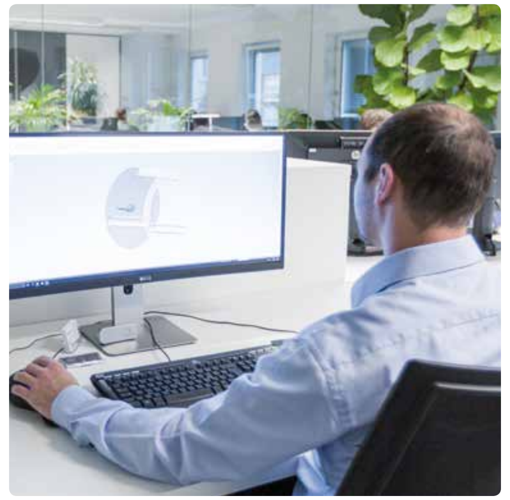
Our approach is, above all, straight-forward, clear and logical. Just like our thematic icons, which will guide you through this brochure.

Siconnex · Development · Sustainability · Global · Service · Software · Advantages · BATCHSPRAY® · Acid · Solvent · Process · Etch · Clean · Resist Strip · Resist Developing · Autoload

Siconnex head office in Hof bei Salzburg, Austria

Siconnex – Equipment Manufacturer for the SEMICONDUCTOR INDUSTRY

We meet the HIGHEST STANDARDS.



People usually excel in things that they are passionate about. Our passion is called BATCHSPRAY®. We are focused on the continuous optimisation of our BATCHSPRAY® technology. Siconnex is a reliable and experienced partner to customers across the world and enjoys a strong global reputation. We supply BATCHSPRAY® equipment for the surface preparation of various end products such as MEMS, power semiconductors, analogue/mixed signal semiconductors, III-V semiconductors and many more besides. Siconnex stands for innovation, cost-effectiveness, sustainability, maximum quality standards and fully in-house expertise. Our systems are market-leading thanks to their small equipment footprint, safety, automation, high throughput and low consumption of economic resources. We are committed to high standards and are highly motivated.
In other words, we are passionate about what we do.

Siconnex PHILOSOPHY

The BEST IDEAS are those that come to fruition.

Siconnex's solutions are driven by our customers.
Customer needs are our top priority and are at the centre of all our decisions and everything we do. We work together with our customers to develop the optimal product to suit their needs and custom-build it. In order to meet the highest quality standards, we are constantly enhancing our products and processes. We select the optimal raw materials and parts and guarantee fast implementation with short project turnaround times, including start-up. We place particular importance on strong partnerships with all our customers, suppliers and staff. Learning from and together with one another is an integral part of life. We are committed to transparent communication and active knowledge transfer to ensure that you are fully satisfied with the end results.

ENVIRONMENTAL PROTECTION at Siconnex

SUSTAINABILITY gets the green light.

The resources provided by our planet have diverse uses, but they are also finite. That means we need to take care of them and learn to use them efficiently and sparingly. Environmental protection and sustainability are at the core of our company philosophy and technology. Siconnex solutions are more environmentally-friendly than conventional methods since they guarantee resource efficiency by minimising the consumption of water and chemicals and reducing the amount of waste. We have not just jumped on the band-wagon by espousing environmental awareness. On the contrary, sustainable processes are one of the key features that set our products apart.

Siconnex BATCHSPRAY® Technology

Why do we build such high-quality equipment? Because WE CAN.

Our innovative BATCHSPRAY® technology is based on a closed system, in which chemical-based cleaning and etching processes are performed highly efficiently. Various chemical processes, including rinsing and drying, are performed fully automatically in a process chamber. The process chamber can be designed for one carrier with 25 wafers or two carriers with 50 wafers to suit your needs. Thanks to our autoload systems, up to four chambers can be loaded simultaneously to enable throughputs of up to 400 wafers per hour.

BATCHSPRAY® guarantees top quality, while also conserving key resources. Several nozzles and rotation of the wafers during the process ensure an absolutely uniform spray pattern of chemicals on the wafers and uniformity within one percent. In addition, our Siconnex BATCHSPRAY® technology cuts the relevant total operating costs by up to 80 percent in comparison with wet benches. Our customers' profits are maximised by the lower equipment footprint, process media and staff costs, while safety is considerably increased. All the applications are tested at our in-house Siconnex laboratory in Salzburg, Austria.

Siconnex BATCHSPRAY® at a glance.

BATCHSPRAY® ACID

ETCH

- Metal Etch (Al, Cu, Ti, Au, Ni,...) with End Point Detection
- III/V Etch (GaAs, AlGaAs, InGaP,...)
- Oxide Etch
- Freckle Etch
- Silicon Etch
- Ge Etch
- Nitride Etch
- Backside Etch
- UBM Etch
- Glass Etch

CLEAN

- SicOzone™ Clean
- SicOzone™ + Ultra Diluted Clean Applications
- Contact Cleans
- Organic Removal & Clean
- Etch Residue Clean
- Post Ash Residue Clean
- HF Last
- Prediffusion Cleans
- Field Cleans (Organic & Inorganic Cleans)

RESIST STRIP

- SicOzone™ Strip
- Positive and Negative Resist Strip
- Implanted Photo Resist Strip
- Enhanced Resist Strip
- Resist Rework

BATCHSPRAY® SOLVENT

CLEAN

- Polymer Clean
- Etch Residue Clean
- Post Ash Residue Clean

RESIST STRIP

- Positive Resist Strip
- Negative Resist Strip
- Metal Lift Off

RESIST DEVELOPING

- Photoresist Developing

BATCHSPRAY® Autoload

ETCH

- Metal Etch (Al, Cu, Ti, Au, Ni,...) with End Point Detection
- III/V Etch (GaAs, AlGaAs, InGaP,...)
- Oxide Etch
- Freckle Etch
- Silicon Etch
- Ge Etch
- Nitride Etch
- Backside Etch
- UBM Etch
- Glass Etch

CLEAN

- SicOzone™ Clean
- SicOzone™ + Ultra Diluted Clean Applications
- Contact Cleans
- Organic Removal & Clean
- Etch Residue Clean
- Post Ash Residue Clean
- HF Last
- Prediffusion Cleans
- Field Cleans (Organic & Inorganic Cleans)

RESIST STRIP

- SicOzone™ Strip
- Positive and Negative Resist Strip
- Implanted Photo Resist Strip
- Enhanced Resist Strip
- Resist Rework

Siconnex BATCHSPRAY® Acid: Efficiency has a name.

Siconnex BATCHSPRAY® Acid is designed for acids and bases. It can be loaded manually or combined with Siconnex BATCHSPRAY® Autoload. The system is completely closed, which means the operator is protected from direct contact with any chemicals. This makes the process safe and also environmentally friendly. Siconnex BATCHSPRAY® Acid 2.0 can process wafer sizes from 50 mm to 300 mm.

ADVANTAGES

- Automated dry-in, dry-out process
- Five processes possible in one sequence
- Repeatability thanks to process control
- Equipment footprint of 1.2 m x 2 m
- Up to 80% less DI water
- Up to 80% reduction in process media
- Closed system
- User safety
- Chemical mixing management system

ETCH

- Metal Etch (Al, Cu, Ti, Au, Ni,...) with End Point Detection
- III/V Etch (GaAs, AlGaAs, InGaP,...)
- Oxide Etch
- Freckle Etch
- Silicon Etch
- Ge Etch
- Nitride Etch
- Backside Etch
- UBM Etch
- Glass Etch

CLEAN

- SicOzone™ Clean
- SicOzone™ + Ultra Diluted Clean Applications
- Contact Cleans
- Organic Removal & Clean
- Etch Residue Clean
- Post Ash Residue Clean
- HF Last
- Prediffusion Cleans
- Field Cleans (Organic & Inorganic Cleans)

RESIST STRIP

- SicOzone™ Strip Positive and Negative Resist Strip
- Implanted Photo Resist Strip
- Enhanced Strip
- Resist Rework

The SicOzone™ process – a win-win-win-situation

- Cleans and strips resist from wafers.
- No need for expensive solvents that are harmful to health.
- Ozone is cheap to produce from oxygen.

All good things come in threes. In other words, it is a win-win-win situation!

Solvent

Siconnex BATCHSPRAY® Solvent:
An investment in the future.

Siconnex BATCHSPRAY® Solvent can process different types of solvents. It is currently available for wafer sizes of 50 mm to 200 mm. The new model, Siconnex BATCHSPRAY® Solvent 2.0, for wafers up to 300 mm, is available from 2018 and will also be compatible with Siconnex BATCHSPRAY® Autoload.

ADVANTAGES

- Automated dry-in, dry-out process
- Fresh and reclaimed chemicals
- Repeatability thanks to process control
- Equipment footprint of 1 m x 1.6 m
- Up to 80% less DI water
- Up to 80% reduction in process media
- Closed system
- User safety

300 mm AVAILABLE from January 2018

CLEAN

- Polymer Clean
- Etch Residue Clean
- Post Ash Residue Clean

RESIST STRIP

- Positive Resist Strip
- Negative Resist Strip
- Metal Lift Off

RESIST DEVELOPING

- Photoresist Developing

Siconnex BATCHSPRAY® Autoload: A fully automated solution.

Siconnex BATCHSPRAY® Autoload is used to automatically load and unload acid and solvent systems. The effective use of our fully automated robot systems enables very high throughputs to be achieved, while the closed design helps to keep the products clean.

ADVANTAGES

- Automated dry-in, dry-out process
- Compatibility with SMIF, FOUP and standard carriers
- Throughput of up to 400 wph
- Equipment footprint < 9 m^2
- Fully automated robot loading
- Flush mounting possible thanks to the completely enclosed design

ETCH

- Metal Etch (Al, Cu, Ti, Au, Ni,...) with End Point Detection
- III/V Etch (GaAs, AlGaAs, InGaP,...)
- Oxide Etch
- Freckle Etch
- Silicon Etch
- Ge Etch
- Nitride Etch
- Backside Etch
- UBM Etch
- Glass Etch

CLEAN

- SicOzone™ Clean
- SicOzone™ + Ultra Diluted Clean Applications
- Contact Cleans
- Organic Removal & Clean
- Etch Residue Clean
- Post Ash Residue Clean
- HF Last
- Prediffusion Cleans
- Field Cleans (Organic & Inorganic Cleans)

RESIST STRIP

- SicOzone™ Strip
- Positive and Negative Resist Strip
- Implanted Photo Resist Strip
- Enhanced Strip Resist Rework

The Siconnex roadmap.
Our EVOLUTION.

It is vital to learn and keep on innovating. Our roadmap and the quality of our products today are testament to our constant progress. In addition, we are continuing to build upon our position as a supplier of processes and production equipment to ensure that we can offer our customers even more versatile solutions and meet their individual needs.

Siconnex
Company foundation, sale of batch spray semiconductor equipment, spare parts and services

2002

BATCHSPRAY® ACID
200 mm for etching, ozone cleaning and stripping

2006

BATCHSPRAY® SOLVENT
up to 200 mm for solvent-based cleaning and stripping

2007

2010

BATCHSPRAY® CLEAN AUTOLOAD
200 mm for ozone cleaning and stripping using a four-chamber system for high throughput

2013

2015

BATCHSPRAY® ACID AUTOLOAD
300 mm for etching, ozone cleaning and stripping using a two-chamber system

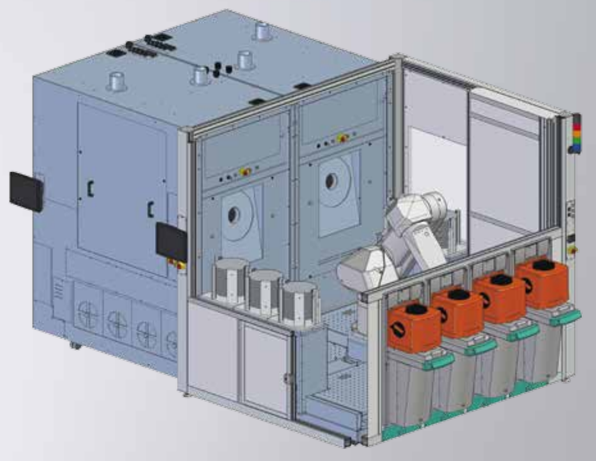
2016

BATCHSPRAY® ACID 2.0
up to 300 mm for etching, ozone cleaning and stripping

2017

BATCHSPRAY® SOLVENT 2.0
up to 300 mm for solvent-based cleaning and stripping

2018



BATCHSPRAY® SOLVENT AUTOLOAD
300 mm for solvent-based cleaning and stripping using a two-chamber system

2018

PROCESSES:

- Aluminium Etch
- Freckle Etch
- Oxide Etch (HF, BOE)
- SicOzone™ Resist Strip

- Solvent Polymer Clean
- Solvent Resist Development
- Solvent Resist Strip

- SPM Strip
- RCA Clean
- Titanium Etch
- Silicon Etch
- Poly Silicon Etch
- Glass Etch
- UBM Etch

- SicOzone™ Clean
- Gold Etch
- Copper Etch
- Nickel Etch

- Barrier Etch (Al, TiN, etc.)
- Aluminium Etch on 300 mm
- SicOzone™ Resist Strip on 300 mm
- GaN Etch
- Silver Etch

- GaAs Etch
- Platinum Etch
- Tri-Metal Etch (Ag, Ni, Ti)

- Clean after Wafer Dicing
- Oxide Etch on 300 mm
- SicOzone™ Clean on 300 mm

- UBM Etch on 300 mm
- Solvent Polymer Clean on 300 mm
- Solvent Resist Development on 300 mm
- Solvent Resist Strip on 300 mm

How you benefit from Siconnex BATCHSPRAY®

Our customers‘ products are diverse. Just like our EQUIPMENT.

The processes you need differ depending on what you are producing. We have exactly the equipment you need for any given process. Siconnex BATCHSPRAY® Acid and Solvent have an extremely wide range of uses. One thing, however, stays constant – their outstanding quality.

Our BATCHSPRAY® equipment makes the production of a wide range of products more efficient. In particular, it enables:

- Reduced use of chemicals and process media
- Enhanced product quality
- Minimisation of waste
- Improved user safety
- Reduction in the required clean-room space

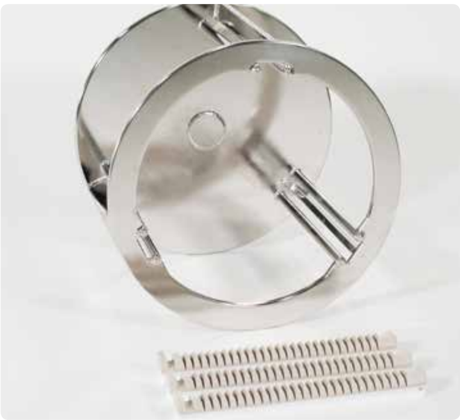
The ability to combine up to five processes provides incredible potential for increased efficiency and optimisation, even in the case of short production runs. The versatility of our technology allows our customers across the world to mass-produce their special products and make them competitive.

Siconnex RESEARCH & DEVELOPMENT

There is only one constant in DEVELOPMENT – it continues forever.

Good solutions can always be made better. Based on that principle, we are constantly optimising our solutions and are always striving to develop new processes in conjunction with our industrial partners and the various institutes that we work together closely with. That naturally applies not only to processes but also to hardware, which needs to meet ever higher demands. Hardware and software development is solely performed by our in-house specialists, whose expertise ensures maximum quality and efficiency. Furthermore, our equipment is custom-built and equipped with precisely the features that the customer needs. This takes our solutions beyond good to optimal.

CERTIFIED
ISO 9001
CERTIFIED
since 2013



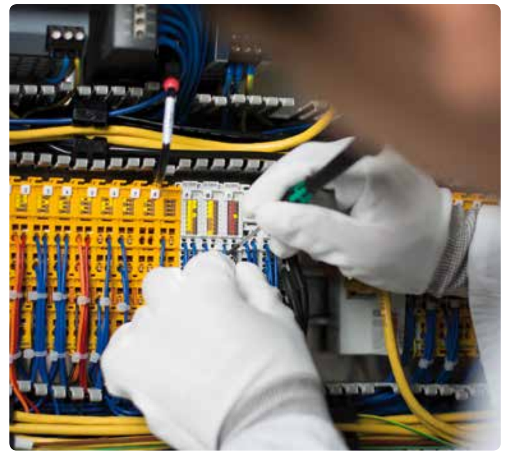
Siconnex SERVICE & TRAINING

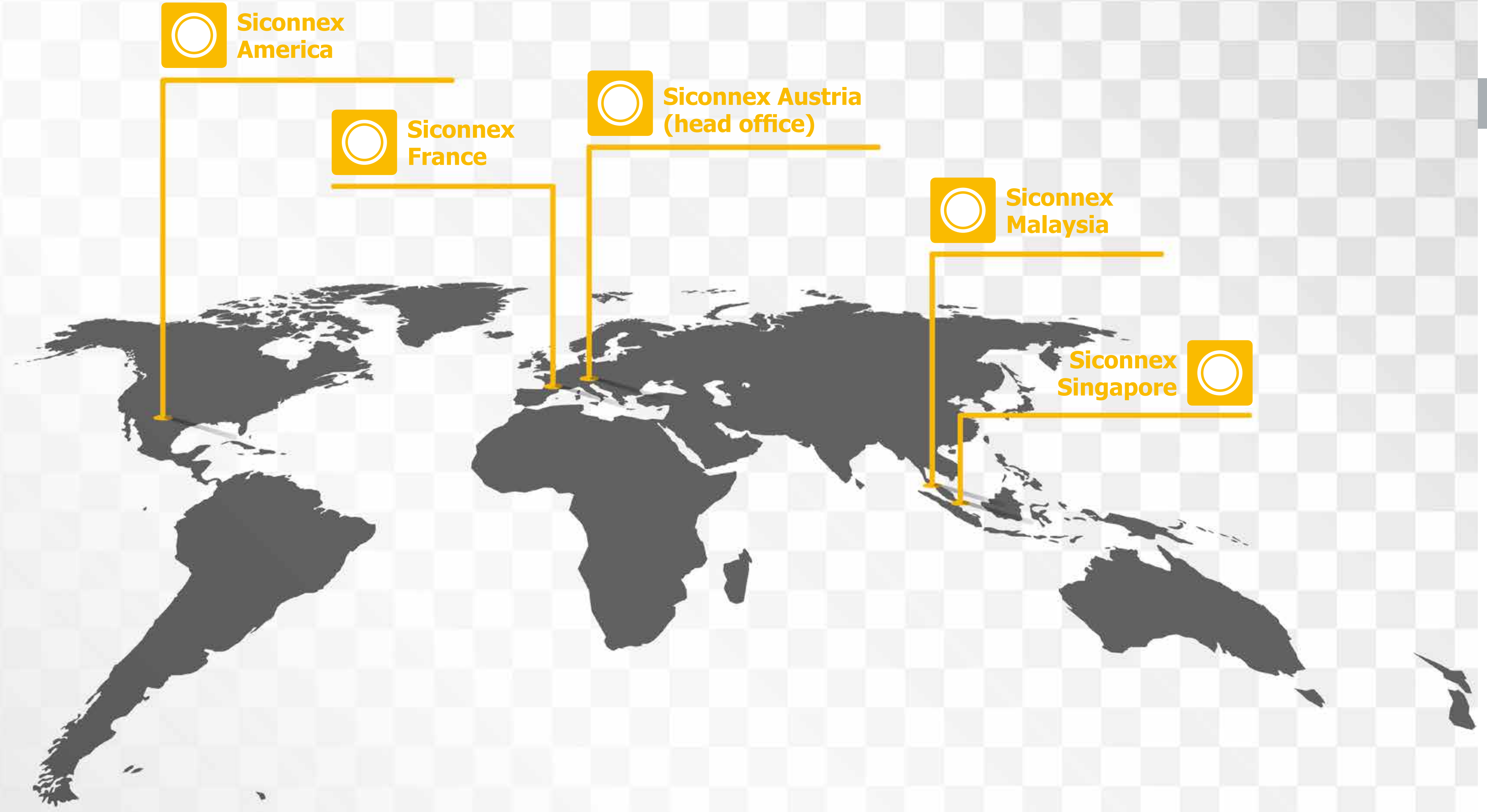
We build equipment. But, most importantly, we work with PEOPLE.

Ensuring that our equipment is easy to maintain is a high priority at Siconnex. In addition, we offer professional training in how to use and maintain our products and pass on our expertise. Our trained service teams are here to assist and advise our customers across the world thanks to our branches in Europe, Asia and the USA.

SICONNEX SERVICE & TRAINING

We are quick, reliable and close at hand. Siconnex systems have a very long service life. Our well-designed maintenance programme provides additional assurance of that. To ensure that our customers can work independently and efficiently, we provide intensive training to give them the skills to maintain the systems themselves.





Siconnex SITES

TOP-QUALITY products made in Austria.
For satisfied customers worldwide.

SICONNEX HEAD OFFICE

Siconnex Austria
Gewerbestrasse 2
5322 Hof bei Salzburg
Tel: +43 6229 36646-0
Fax: +43 6229 36646-146
Email: office@siconnex.com

SICONNEX OFFICES

Siconnex France
83 Rue Roger du Marais 8
38430 Moirans
Tel: +33 631 305554
Email: france@siconnex.com

Siconnex America
3010 LBJ Freeway Suite 1200
Dallas, TX 75234
Tel: +1 214 710 2469
Email: america@siconnex.com

Siconnex Malaysia
No. 1-04-15 e-Gate
Lebuh Tunku Kudin 2
11700 Gelugor Penang
Tel: +6 012 4256568
Email: malaysia@siconnex.com

Siconnex Singapore
4 Battery Road
Bank of China Building #25-01
Singapore 049908
Tel: +65 838 88977
Email: singapore@siconnex.com

BY DANIELA_WEICHENBERGER GRAPHIC_DESIGN & MAREIKEFALLWICKL CONCEPTION TEXT

siconnex
customized solutions

www.siconnex.com

siconnex 2017/2018 EN