



BAKERY INDUSTRY

# SMC bakes for you

Expertise  
Passion  
Automation



# SMC solutions for the bakery industry

Welcome to the bakery industry, where innovation and efficiency are crucial elements in delivering delectable treats to consumers worldwide. In this fast-paced sector, a convergence of cutting-edge technologies and industry standards has revolutionised the way bakeries operate, ensuring not only mouthwatering products but also sustainable and energy-efficient processes.

One of the key advancements in bakery automation is the integration of **IO-Link and fieldbus systems**. These technologies enable seamless communication between devices, such as sensors and actuators, creating a networked environment that enhances precision and control in production processes. IO-Link facilitates real-time data exchange, allowing bakeries to optimise operations, reduce downtime, and improve overall productivity.

Bakeries are increasingly adopting eco-friendly practices, such as waste reduction, recycling initiatives, and the use of sustainable ingredients. The industry recognises its responsibility to minimise environmental impact and is leveraging technology to develop more **sustainable packaging solutions**, energy-efficient equipment, and responsible sourcing practices.

**Energy efficiency** is a paramount concern in the bakery sector, where ovens, mixers, and refrigeration systems are integral to daily operations. Innovations in equipment design and control systems are helping bakeries reduce their carbon footprint. By embracing energy-efficient technologies, such as smart heating and cooling solutions, bakeries can not only cut costs but also contribute to a greener, more sustainable future.

**Quality standards** are the backbone of the bakery industry, ensuring that products meet regulatory requirements and consumer expectations. Adherence to stringent quality control measures guarantees the consistency and safety of bakery items. As technologies evolve, bakeries are incorporating advanced quality assurance systems to monitor and maintain product integrity throughout the entire production process.

**EHEDG compliance** denotes adherence to the guidelines set forth by the European Hygienic Engineering & Design Group. These standards are dedicated to improving food safety through the design and engineering of equipment and facilities that are easy to clean.

A rigorous food safety management plan incorporating a mandatory HACCP (Hazard Analysis Critical Control Point) plan are the cornerstones of food safety. Hygienic design is central to a good HACCP plan as it helps mitigate or reduce the risk of food contamination.



In this era of constant innovation and heightened consumer consciousness, the bakery industry is not just about baking goods; it's about embracing technological advancements, sustainability practices, and quality standards to deliver an exceptional and responsible culinary experience. As the industry continues to evolve, bakeries worldwide are at the forefront of creating a future where delicious treats are not just a delight for the taste buds but also a celebration of responsible and efficient production.



**Marco Zagatti** End user country leader

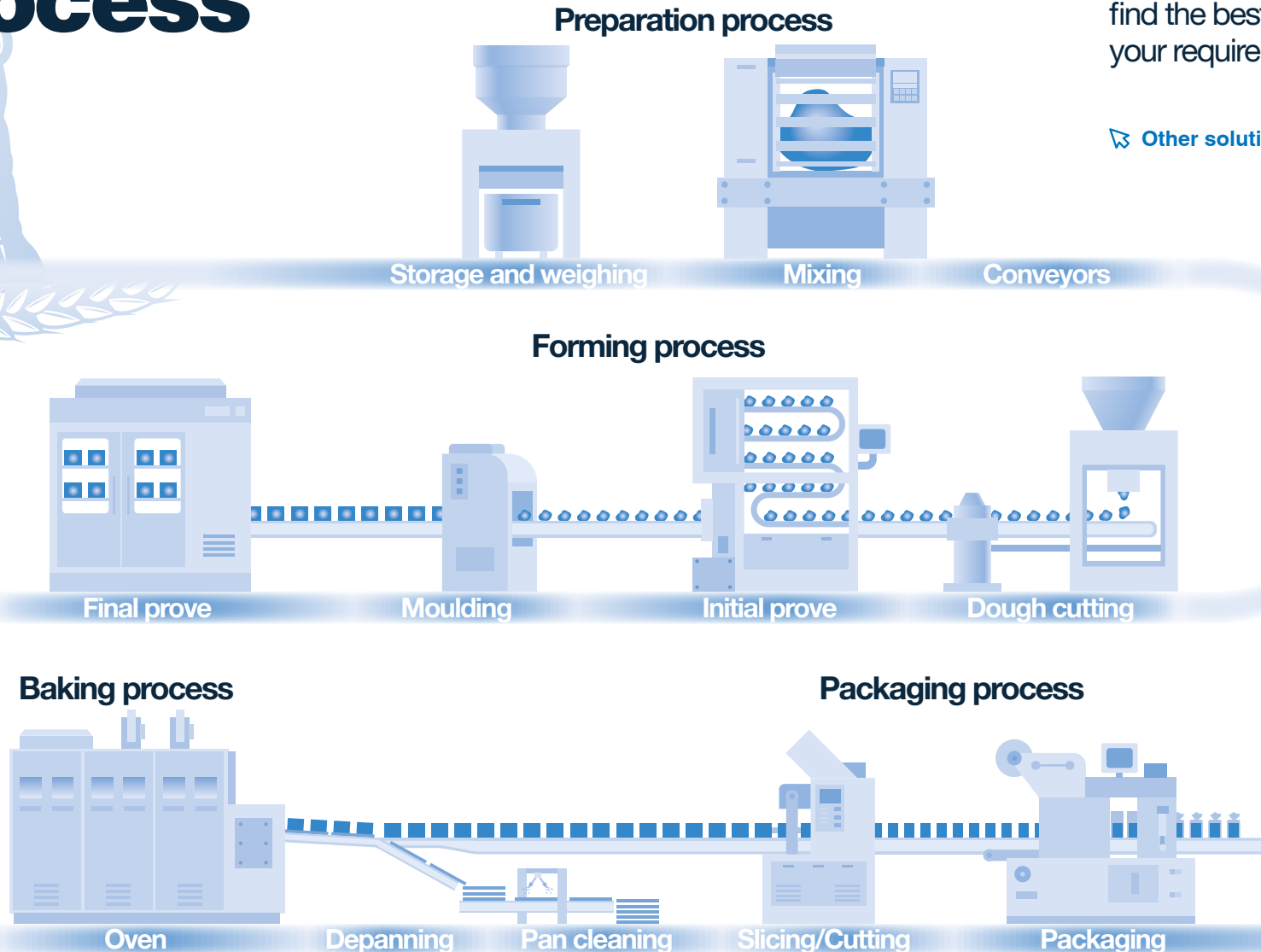
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- 4 We understand your production process**
  - 5 Storage and weighing**
  - 6 Mixing**
  - 8 Conveyors**
  - 9 Depanning**
  - 10 Pan cleaning**
  - 11 Slicing/Cutting**
  - 12 Packaging**
  - 14 Other solutions that could help**
  - 16 Our support network**



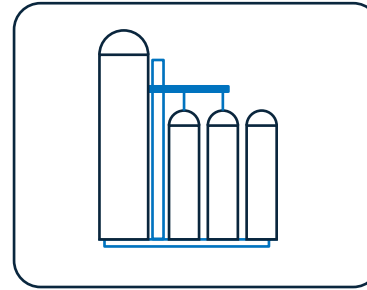
# We understand your production process

Knowledge is power. By thoroughly understanding each stage of the bakery manufacturing process, from the initial storing and weighing to the final packaging, we ensure that we find the best solution for any of your requirements.

Other solutions that could help



# Storage and weighing



In the bakery processes, the stages of storage and weighing play a fundamental role in ensuring the precision and quality of the final culinary creation. Effective storage practices safeguard the integrity of ingredients, preserving their freshness and enhancing overall product quality.

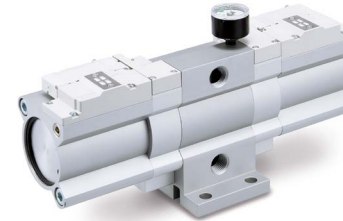
Simultaneously, meticulous weighing procedures contribute to the precision required for successful recipe execution.



## JSXFA Series +

### Pulse valve

Reduce maintenance and increase the service life of your bag filters.



## VBAE Series +

### Energy-saving, exhaust-recovery booster regulator

Decrease main line delivery pressure and boost pressure to specific operations.



## ZHV Series +

### Vacuum flow

Remove dust and bread crumb debris with our air amplifier.



## HF1-AC-D-X7000 Series +

### Air combination unit for the food industry

Guarantee the right air quality (ISO 8573-1) with food-safe components.

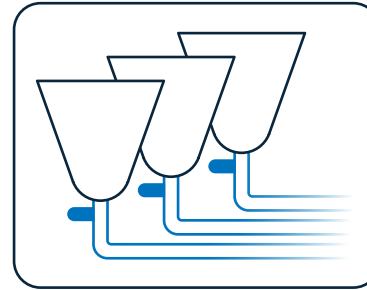


## KFG2H-E Series +

### Insert fitting for the food industry

Ensure hygienic, durable pneumatic connections for clean, safe weighing and storage with FDA and EHEDG compliance.

# Mixing



Combining the ingredients initiates the chemical process of baking, encompassing the combination and hydration of dry components, incorporation of air, and the development of gluten to achieve optimal dough-handling characteristics. Precise measurements and control are applied to the mixing time, energy input, and dough temperature.



## CP96N Series +

### Cylinder with lock

Keep the lid closed and stop ingredients from entering the surrounding environment.



## IP8000/8100 Series +

### Electro-pneumatic positioner

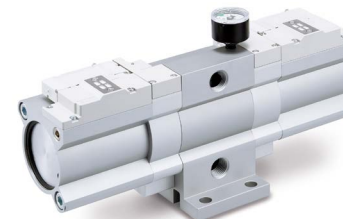
Precision control for dosing applications.



## PA Series +

### Process pump

Control the ingredient mix accurately.



## VBAE Series +

### Energy-saving, exhaust-recovery booster regulator

Decrease main line delivery pressure and boost pressure to specific operations.



#### JSB Series +

### Angle seat valve

Boost flow rate and minimise losses.



#### KFG2H-E Series +

### Insert fitting for the food industry

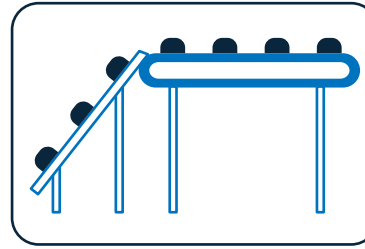
Ensure hygienic, durable pneumatic connections for clean, safe weighing and storage with FDA and EHEDG compliance.



Ensure products are ATEX directive-compliant.

**Read more** +

# Conveyors



The conveyors play a pivotal role in optimising production workflows, facilitating the smooth transition of raw materials through various stages of the baking process. From the initial transportation of flour and other essential components to the meticulous handling of dough and the orderly presentation of finished goods, conveyors form the backbone of a well-orchestrated bakery operation.



## AXTS Series +

### Pulse blow valve

Bring down running costs and encourage air saving by blowing in pulses, ensuring efficient blowing.



## HF2A-CG5 Series

### Stainless steel cylinder/non-adjustable air cushion type

Ensure the alignment of conveyors at all times, with FDA compliant and water resistant components.

**Ask our experts** +



## ZHV Series +

### Vacuum flow

Suck away bread crumbs and flour dust with vacuum function.



## IP200 Series +

### Cylinder positioner

Ensure a correct alignment of conveyors.



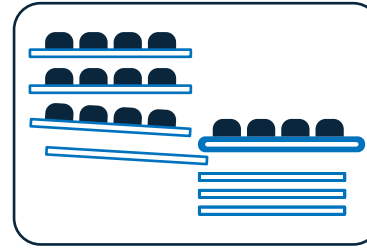
## HF2A-LEY Series +

### Dust-tight/water-jet-proof rod type electric actuator

IP69K stainless electric actuator ensures hygienic, high-speed, precise conveyor motion in washdown environments.



# Depanning



The depanning stage is an important act in the journey from oven to table. Depanning, the art of carefully extracting baked goods from their moulds, marks the culmination of the baking process and the beginning of their transformation into delectable delights. This intricate procedure requires a delicate balance of precision and finesse to ensure that each product maintains its shape, texture, and visual appeal.



## VMG Series +

### Blow gun

Blow away bread crumbs with optional valve integration, enabling precise control.



## XT661-X442 Series

### Vortex gripper

Allows for the transfer of spherical workpieces without rotation with FDA compliance. Ideal for transfer of pastry, muffins, cupcakes, etc.

**Ask our experts** +



## VPX400 Series +

### Safe exhaust valve modular connection type

Safely depressurise pneumatic grippers on emergency stops.



## ZP2-40ZJMS Series

### Metal detectable pad

Bet on this bellows, FDA compliant pad, special silicone blue with powder metal for easy detection while inspection.

**Ask our experts** +

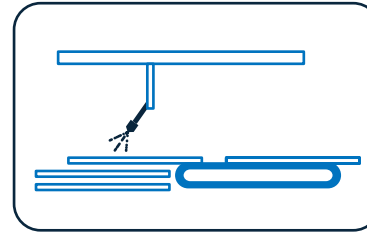


## Facts over words

A customer had problems in the depanning process, as competitors' vacuum pads had to be replaced every three months. This was due to the high temperatures generated inside the depanner, which led to less flexibility of the pads, colour loss and even detachment of parts of the pads.

With SMC's metal detectable pad, all these problems can be solved. Flexible bellows, FDA compliance, high lifetime and blue design containing metal powder for the easy identification of the pads in case of detachment. All the necessary features to reduce downtime and failure and improve OEE.

# Pan cleaning



As an integral part of the overall production workflow, the pan cleaning process ensures that baking pans and trays are free from residue, contaminants, and unwanted flavours that could compromise the quality of the baked goods. This meticulous cleaning procedure is essential for upholding food safety, product consistency, and the overall reputation of the bakery.



## ZHV Series +

### Vacuum flow

Multiply air supply for blowing and suction by 4 and 3 respectively.



## KNH Series +

### Efficient nozzle

Increase efficiency of dough detaching.



## JSX/JSXD/JSXZ/JSXU Series +

### 2-port solenoid valve

Control the flow of the water circuit.



## AXTS Series +

### Pulse blow valve

Bring down running costs and encourage air saving by blowing in pulses, ensuring efficient blowing.



## IBV Series +

### Impact blow valve

Increase impact force due to higher peak pressure.

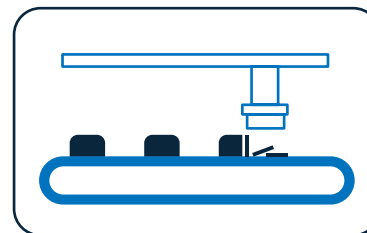


## HF1-AC-D-X7000 Series +

### Air combination unit for the food industry

Ensure your bakery meets its pre requisite and HACCP requirements for compressed air safety at point of use.

# Slicing/Cutting



The slicing stage is a precision-driven performance, transforming fully baked creations into uniform portions ready for consumption. The slicing process, often the final touch before products reach the consumer, requires a delicate balance between artistry and technological finesse.



## VMG Series +

### Blow gun

Blow away bread crumbs with optional valve integration, enabling precise control.



## HF2B-SFDA Series +

### Bacteria removal filter

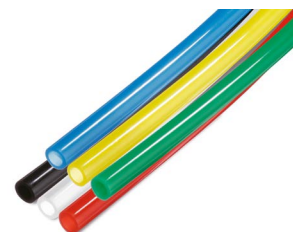
Ensure clean dry anti-bacteria free air at point of use when packing bakery goods into packaging.



## ZHV Series +

### Vacuum flow

Suck away bread crumbs and flour dust with vacuum function.



## TX/TIX Series

### FDA and (EU) No 10/2011 compliant polyethylene tubing

Meet food contact material requirements with Japan Food Sanitation Act, US FDA, and Regulation (EU) No. 10/2011 pneumatic tube.



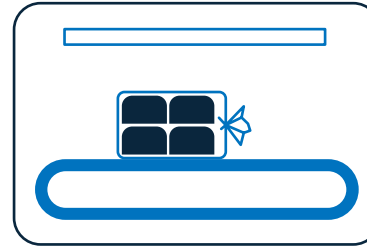
## HF2-BF Series +

### Antibacterial filter/Odor removal filter/Bacteria removal filter

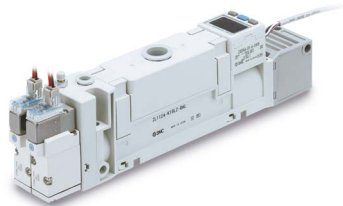
Ensure clean dry anti-bacteria free air at point of use when packing bakery goods into packaging.

Ask our experts +

# Packaging



The packaging step involves carefully enclosing and protecting freshly baked goods before they embark on their journey to consumers' homes. The packaging process is a meticulous part of the process that ensures not only the preservation of flavour and quality, but also ensures product safety.



## ZL1/ZL3/ZL6 Series +

### Multistage ejector

High suction flow with 3-stage diffuser construction.



## IZS51 Series +

### Bar type ionizer with integrated valve

Optimise packaging performance through static elimination, with optional valve integration for enhanced control.



## IZT40/41/42/43 Series +

### Bar/nozzle-type ionizer, separate controller

Improve packaging performance through static elimination on plastic packaging.



## ZP3C Series +

### Abrasion resistant vacuum pad

Suitable for the adsorption transfer of corrugated cardboard.





### ZNC-C Series +

#### Bernoulli gripper with Coanda grip

Improve product quality and reduce maintenance time using non contact grippers.



### MHM-X7400A Series +

#### Magnetic gripper for collaborative robots

Magnetic gripper unit with integrated solenoid valve and speed adjustment mechanism.



### RMHZ2 Series +

#### Air gripper unit for collaborative robots

Air gripper unit with integrated solenoid valve and speed adjustment mechanism.



### ZXPE5 Series +

#### Electric vacuum gripper for collaborative robots

Electric vacuum gripper with integrated vacuum pump, atmospheric release valve, pressure monitor and pads.



# Other solutions that could help



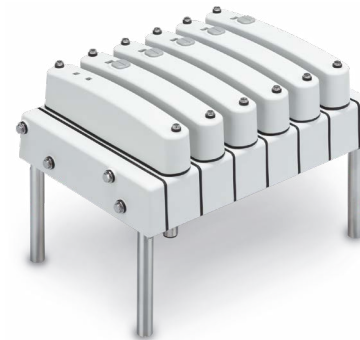
Apart from the solutions provided above for the different parts of the process analysed, SMC offers other products that could help achieve the final quality of the baked goods.



## VFN2 20N Series +

### NAMUR Interface 3/5 port solenoid valve

Ensure longer lifetime thanks to the standardised connection.



## JSY5000-H Series +

### Clean design manifold valve

Reduce liquid accumulation allowing thorough wash-down with IP69K enclosure.



## PSE200A Series +

### Multi-channel digital sensor monitor

Monitor the parameters of up to 4 sensors.



## IDG-D Series +

### Modular connection type membrane air dryer

Reduce energy costs when drying compressed air.



### PF3A□H Series +

#### Digital flow switch for large flow

Detect leaks and make sure air consumption is visible. Modular version available, compatible with FRL units with integrated pressure and temperature sensor.



### PFUW Series +

#### Clamp-on type flow sensor for liquids

Measure and monitor liquid flow in bakery processes without interrupting fluid systems.



### HRSC Series +

#### Circulating fluid temperature controller, standard type

Improve the performance and reliability of your machine thanks to efficient temperature stability of dough mix prior to baking. All with non F-gas (CO<sub>2</sub> refrigerant).



### AMS20/30/40/60 Series +

#### Air Management System

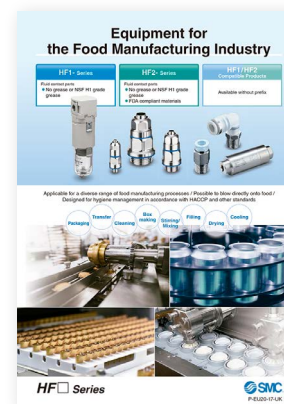
Level up your compressed air management.



### EX600-W/EXW1 Series +

#### Wireless system

Improve hygienic design of packaging cells by eliminating power and communication cables.



Designed for hygiene management in accordance with HACCP and other standards.

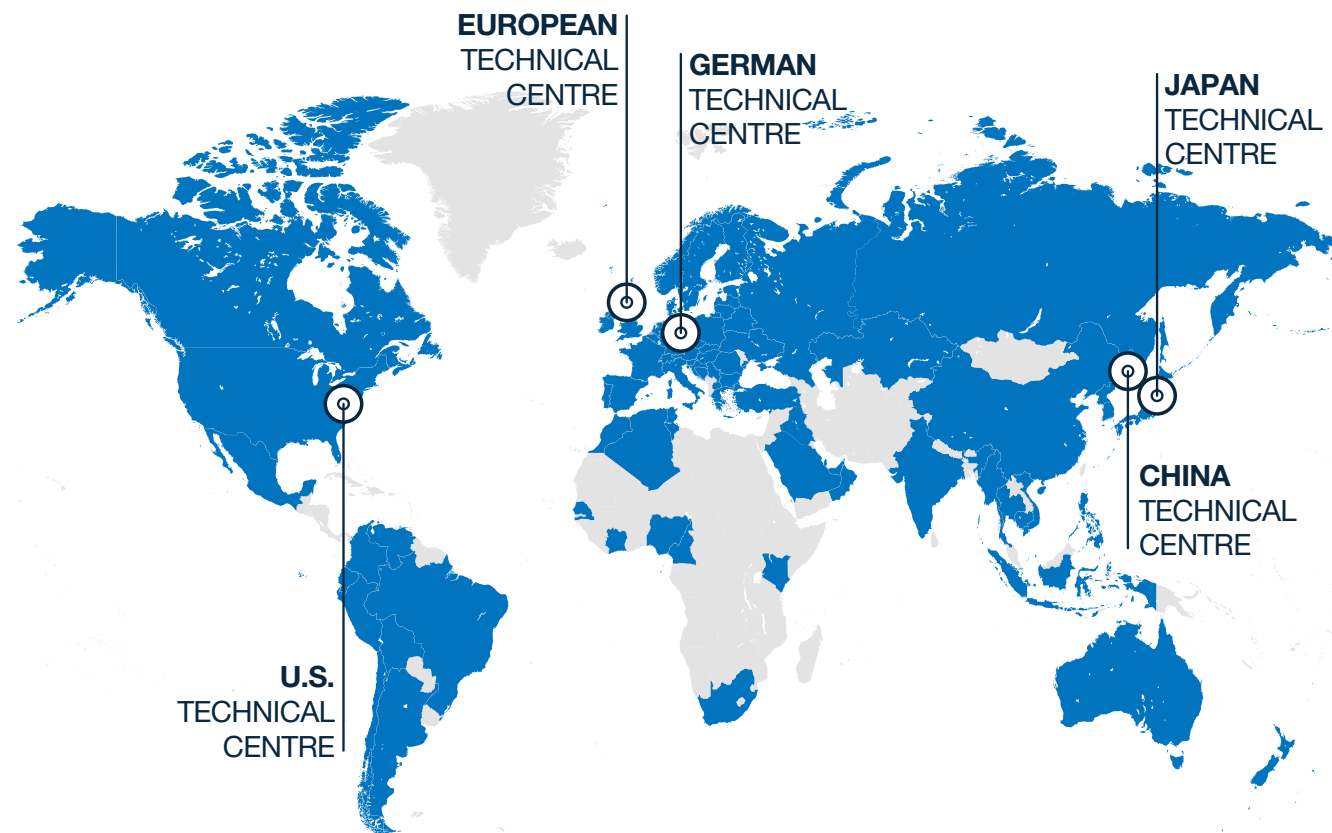
**Read more** +

# Our support network

## SMC's worldwide commitment

One of the things we do best at SMC is **being close to our customers**. Local support, on a global scale.

With **support** in over **500 locations** across **80 countries** and regions **worldwide**, our sales force of **7000 experts** maintains **close communication with customers**.





# SMC Business Continuity Plan

## Sustainable growth also means ensuring uninterrupted operations

We are committed to ensuring that SMC is prepared for any emergency and that our business activities will not stop in the event of such circumstances. SMC aims to fulfil our product supply responsibilities and maintain our customers' trust by contributing to both sustainable growth and the expansion of technological innovations.

SMC, as a comprehensive manufacturer of automatic control equipment that supports automation, is able to promptly provide products that meet our customers' needs anywhere in the world.

## Production BCP

### Ensure customer order fulfilment

Reliable delivery for you thanks to our 9 global logistic centres and 38 production sites worldwide, 10 of which are located in Europe. Moreover, flexibility to rapidly respond to any sudden change in the manufacturing environment.

## Finance BCP

### Safe & Solid financial base

In the event of an emergency, SMC can provide a safe and solid financial base (with cash, deposits, and equity capital) that will sufficiently cover the working capital and funds needed to rebuild buildings and the equipment required for business continuity. This is done to provide peace of mind to our customers and workers alike.

## Information security BCP

### Vital data kept safe

Strengthen information security for protection against computer viruses and cyberattacks, plus the installation of data centres to establish a disaster recovery system. Your information is safe with us.

## Engineering BCP

### Consistent technical support

2,100 engineers at our 5 technical centres around the globe (2 in Europe – Germany and UK).

## Sales BCP

### Consistent sales support

7,000 sales engineers worldwide ready to recommend the best solution for you. Over 80 global locations to make sure that wherever you are, we are there too.



Discover more



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