



Expertise – Passion – Automation



**Dental industry applications**

## SMC – Your automation partner for the dental industry

Dental industry applications

SMC is a world leader in innovative design of automation components specifically suited to the MEDICAL DEVICE, LIFE SCIENCE, and DENTAL INDUSTRY.

Our global network of sales and services, covering over 83 countries, is supported by an expansive manufacturing capacity in order to meet our customers' needs.

We offer over 700,000 products that include technologies for pneumatic and robotic automation, microfluidics, thermo control, high purity liquid and gas, among many others.

Custom design, total solution and component quality are part of our DNA.

Our components...for the life of your device.

### Interactive index

We understand your daily needs **2**

Delivery systems and chairs



Abrasion and ultrasonic scalers



Specific air and vacuum production



Decontamination and lubrication of tools



Lasers, machining, and aligner manufacture



Looking for a custom dental industry solution? Then look to SMC **9**

SMC Business Continuity Plan **10**



## Industrial maintenance

It's no secret that maintenance is the key to the prevention of problems, cost savings and improvement in productivity and that is why it has become a fundamental aspect of the everyday reality of production lines. With the solutions that SMC can provide to achieve successful maintenance actions you will find the best way to improve the efficiency and productivity of your process.



## Smart Flexibility

This is the main concern of the Industry 4.0, Factory of the Future, Smart Factory or Digitalisation, you name it. It is no longer a question of mass production, but to do so in a personalised, cost-effective, fast and sustainable way.



# We understand your daily needs

Our local teams of highly trained experts are on hand to help you achieve your goals

## Your safety in our focus

Creating confidence with confidence. SMC is an innovative, reliable and strong partner for pneumatic and electrical automation technology. We accompany our customers throughout the entire life cycle of their plant and, for all relevant safety issues, we have competent and professional solutions at your disposal.



## Energise your efficiency

In our 24/7 economy and as governments, industries and consumers battle with in the quest for ever increasing supplies of energy, SMC has always been fully committed to assisting customers in reducing their bills and and, of course, in making its modest contribution to global sustainability.

## Size & weight optimisation

Nowadays space and weight are at a premium. SMC is on the way to downsizing your machine components, continually re-designing our products so you can achieve more efficient, compact and light machinery.



# Delivery systems and chairs

Automation

Controls

Process

- ▶ 2-way valve for air (hand piece)
- ▶ 2-way valve for water (syringe)
- ▶ Proportional valve (hand-piece speed)
- ▶ 2-way valve for cuspidor and lumbar Adjustment on chair

- ▶ 3-way valve for purge cleaning
- ▶ Air gauge or digital pressure switch
- ▶ Filter/Regulator for system air
- ▶ Strainer/Regulator for system water
- ▶ Electric actuator for chair adjustment.

Discover more by clicking on the pictures



## PVQ for speed control

- Fluid: air, inert gas
- Flow rate: up to 100 l/min
- Service life: lasts 25 million cycles
- Repeatability: 3 % or less
- Can be used for vacuum applications.



## V100 3-port valve for air

- Flow rate: up to 24 l/min
- Low power consumption: 0.1 W
- 0 MPa to 0.7 MPa
- Valve width: 10 mm.



## SFDA bacteria removal filter

- 0.01 µm nominal filtration rating
- HACCP and FSSC22000 standards.



## LEY electric actuator for chair position

- Work-load: 60 kg (horizontal); 53 kg (vertical)
- Positioning repeatability: ±0.02 mm
- Flexible motor types and controls.



## LVM for air, vacuum and liquids

- Direct operated rocker type/ poppet type
- Increased chemical resistance
- Low power consumption
- Change in volume 0.01 µL or less
- Space saving.



## SX90 for massage and lumbar

- 2-port and 3-port universal
- Operating pressure: -100 kPa to 0.2 MPa
- Flow rate: max 90 l/min (3-port).



## KKA coupler for air and water

- Body material: Stainless steel 304
- Seal material: Special FKM
- Grease-free.



## AC for air supply

- Clean looking, modular design
- Element and bowl are in one-piece
- Transparent bowl provides 360° visibility.



## M/MS/KQG2/KQB2 Fittings

- Ni-plated brass and stainless steel 316
- Seal parts: FKM / PVC
- Grease-free.



## WR and WF for water supply

- Tamperproof, lockable adjustment handle
- Simple maintenance; replaceable mesh
- Resilient body and seal materials.



ISE



PSE

## PSE/ISE for pressure monitoring

- Measure condition, program values and alarm points.
- Remote output features.



# Abrasion and ultrasonic scalers

Automation

Controls

Process

- ▶ Vacuum and air filter for supply air
- ▶ Miniature regulator
- ▶ Bacteria removal filter
- ▶ Gauge or pressure switch
- ▶ 2-port poppet valve

- ▶ Miniature 3-port valve
- ▶ 2, 3-port liquid isolation valve
- ▶ Custom manifold
- ▶ Membrane air dryer.

Discover more by clicking on the pictures

## ZFC in-line air filter for air and vacuum

- One unit for both positive and negative pressure
- Built-in one-touch fittings
- Optional blue element for easy contaminant detection.



## ARJ miniature regulator

- Compact and lightweight (16 g)
- Built-in one-touch fittings
- Low cracking pressure 0.02 MPa.



## Bacteria removal filter

- Bacteria capture performance: LRV  $\geq 9$  Use of FDA/Food Sanitation Law compliant materials
- Nominal filtration rating: 0.01  $\mu\text{m}$
- Flow rate: 500 l/min (ANR).



## LVM liquid valve

- Compact, direct-acting rocker and poppet
- Wetted part material: PEEK (body/plate)
- Diaphragm choice of EPDM, FKM or Kalrez®
- Available with power-saving circuit.



## S070 mini 3-port valve for air

- 3-port solenoid valve, direct operated
- Valve width: 7 mm
- Operation noise: 38 dB(A) or less
- Power consumption: 0.1 W (with power-saving circuit).



## VDW 2-port valve for water

- Compact, direct-acting
- Available in resin, brass or stainless body
- Grease-free construction available
- Built-in one-touch fittings (resin body).



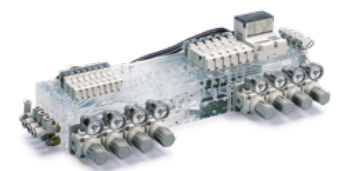
## IDG membrane air dryer for air supply

- No electricity required
- dehumidification
- Dew points from -20 °C to -60 °C
- No vibration or heat discharge.



## Custom manifolds and engineered subassemblies

- Bonded = Acrylic Resin, PVC, PEI (Ultem®), PSU
- Machined = PEEK, Aluminium, Stainless Steel, etc.



# Specific air and vacuum production

[Automation](#)[Controls](#)[Process](#)

- ▶ Air preparation units
- ▶ Desiccant and refrigerated air dryers
- ▶ Fittings and tubing
- ▶ Auto drain and vacuum separator
- ▶ 2-port valve for air and vacuum.

[Discover more by clicking on the pictures](#)

## KQ2 fitting and TU tubing

- Fluid: air, water
- Applicable tubing O.D.: Ø 2 to Ø 16 mm
- Operating pressure range: -100 kPa to 1 MPa
- Release collar allows easy removal of tubing.



KQ2



TU

## AC air prep assembly for air supply

- Clean looking, modular design
- Energy saving with high flow rate
- Transparent bowl guard.



## JSX 2-port valve

- 1/8" to 3/8" G, NPT and Rc port
- UL and NSF compliant
- NBR, FKM and EPDM seal material
- 360° coil rotation.



## AD402-A, auto drain valve

- Polycarbonate, nylon, or aluminium bowl
- 360° visibility of bowl contents
- Easy maintenance.



## Pressure and vacuum gages

- Red and green colour zones for improved visibility
- Wide variety of port thread options
- Transparent bowl guard
- GP46 pressure gauge with built-in switch.



## IDF refrigerated air dryer

- Models for use in North America, Europe, Asia and Oceania
- 50/60 Hz operation.



## AMJ vacuum drain separator for vacuum pump

- Removes water droplets from intake of vacuum pumps
- Removes over 90 % of droplets
- Almost no drop in pressure.







## Decontamination and lubrication of tools

Automation

Controls

Process

- ▶ VXS2 and VXB valves
- ▶ JSX stainless steel valve
- ▶ High purity gas equipment
- ▶ High-purity/High-temperature tubing and fittings
- ▶ Fluoropolymer tubing
- ▶ Pinch valve
- ▶ Diaphragm pumps.

### VXB air-operated angle seat valve

- For steam, air, and water
- Low leakage of 10 cm³/min or less
- Long service life: 3 million cycles.



Discover more by clicking on the pictures

### LQ/TL fluoropolymer fittings and tubing

- High purity and high chemical resistance
- Operating temperature: 0 to 150 °C.



LQ



TL

### JSX/JSXD 2-port valves

- Stainless steel body standard
- UL compliant
- Enclosure up to IP67.



JSX



JSXD

### VXS2 2-port steam solenoid valve

- Long service life: 3 million cycles
- Port size 1/4 to 1"
- IP65 Enclosure.



### ISE70G high-precision digital pressure switch

- Pressure ranges: 1, 2, 5 and 10 MPa
- 3-screen, 3-colour display
- UL compliant



### LPV solenoid pinch valve

- Complete fluid isolation
- On/Off flow control through direct pinching of tubing
- U-shaped slot for easy tubing replacement.



### LSP/PB diaphragm pumps

- Compact, diaphragm pump
- Solenoid or air operated type
- Long service life.



LSP



PB

### AP Tech high-purity gas valves and regulators

- Suitable for UHP gas line supply line
- Body material: 316L SSs or brass
- Point of use and source cylinder applications.



### AK check valve

- Easily mounted onto equipment
- One-touch fittings built in
- Low cracking pressure (0.005 MPa).





# Lasers, machining, and aligner manufacture

Automation

Controls

Process

- ▶ Temperature control for dental laser
- ▶ Electric actuator
- ▶ Solenoid directional valves
- ▶ Digital flow and pressure sensors (for chilled water)
- ▶ Quick couplers
- ▶ Liquid transfer pump
- ▶ Ionizer for milling machine.

Discover more by clicking on the pictures

## IZG gun type ionizer

- Lightweight: Only 200 g
- Easy to hold/grip
- Lighting LED
- Select from continuous or pulse blow.



## PF3W7-Z digital flow and temperature sensor

- Temperature range: 0 to 90 °C
- Accuracy (temperature):  $\pm 5$  % F.S.
- Accuracy (flow):  $\pm 3$  % F.S.



## PA diaphragm pump

- Air-operated process pump
- Compact, large capacity
- Long life, easy maintenance.



## JSY directional control valve

- Space saving, with large flow rate
- Power saving down to 0.1 W
- Modular construction
- Variety of I/O options.



## INR-244-831 miniature chiller

- Compact, space saving
- Low-noise 45 dBA capable
- Set temp range: 10 °C to 60 °C
- Temperature stability  $\pm 0.01$  °C to 0.03 °C.



## LEFS electric actuator

- Positioning repeatability:  $\pm 0.02$  mm
- Maximum speed: 1500 mm/s
- Incremental 17-bit or absolute 18-bit encoder.



## KKA coupler, stainless steel

- Body material: Stainless steel 304
- Seal material: Special FKM
- Grease-free specification (standard).



## VV061 miniature solenoid valve manifold

- Compact direct operated 3-port solenoid valve
- Unified air and electrical connections
- Dustproof enclosure.





# Looking for a custom dental industry solution? Then look to SMC

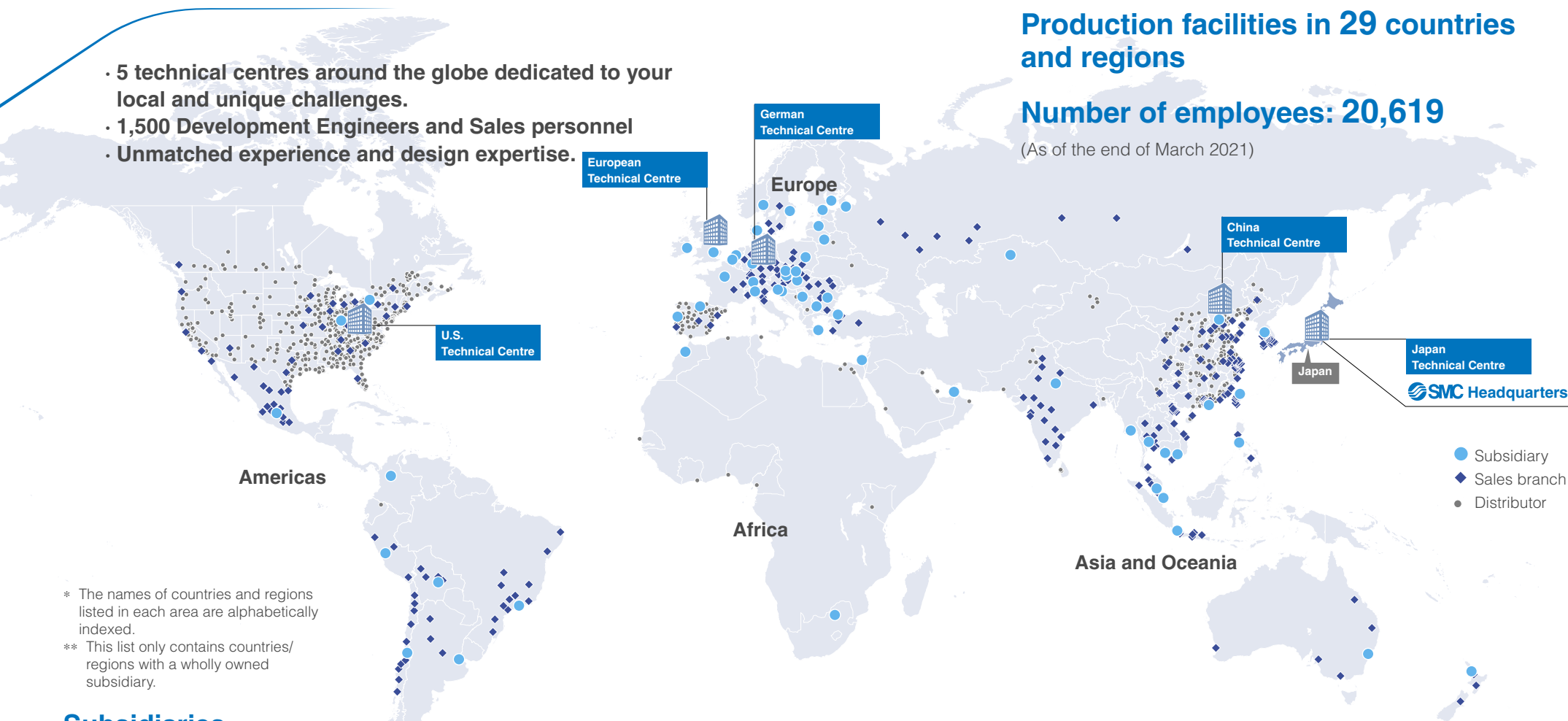
- 5 technical centres around the globe dedicated to your local and unique challenges.
- 1,500 Development Engineers and Sales personnel
- Unmatched experience and design expertise.

Local services in 532 locations across 83 countries and regions worldwide

Production facilities in 29 countries and regions

Number of employees: 20,619

(As of the end of March 2021)



\* The names of countries and regions listed in each area are alphabetically indexed.

\*\* This list only contains countries/regions with a wholly owned subsidiary.

## Subsidiaries

### Americas

- ★ Argentina
- ★ Bolivia
- ★ Brazil
- ★ Canada
- ★ Chile
- ★ Colombia
- ★ Mexico
- ★ Peru
- ★ United States of America

### Europe/Africa

- ★ Austria
- ★ Belgium
- ★ Bulgaria
- ★ Croatia
- ★ Czech Republic
- ★ Denmark
- ★ Estonia
- ★ Finland
- ★ France
- ★ Germany
- ★ Greece
- ★ Hungary
- ★ Ireland
- ★ Italy
- ★ Kazakhstan
- ★ Latvia
- ★ Lithuania
- ★ Morocco

- Netherlands
- Norway
- Poland
- Portugal
- Romania
- ★ Russia
- Serbia
- Slovakia
- Slovenia

- ★ South Africa
- ★ Spain
- ★ Sweden
- ★ Switzerland
- ★ Turkey
- ★ United Kingdom

### Middle East

- Israel
- United Arab Emirates

### Asia/Oceania

- ★ Australia
- ★ Cambodia
- ★ China
- ★ Hong Kong
- ★ India
- ★ Indonesia
- ★ Korea
- ★ Malaysia
- ★ Myanmar
- ★ New Zealand
- ★ Philippines
- ★ Singapore
- ★ Taiwan
- ★ Thailand
- ★ Vietnam

★ Production facility

## 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.

### 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.

### Sales BCP

#### Consistent sales support

8,700 sales engineers worldwide ready to recommend the best solution for you.  
83 global locations to make sure that wherever you are, we are there too.

### Production BCP

#### Ensure customer order fulfilment

Reliable delivery for you thanks to our 8 global logistic centres and 34 production sites, 10 of which are located in Europe. Moreover, flexibility to rapidly respond to any sudden change in the manufacturing environment.

**Aiming to gain your trust  
Sustainability through  
reliability**

### Engineering BCP

#### Consistent technical support

1,700 engineers at our 5 technical centres around the globe (2 in Europe - Germany and UK).





Expertise – Passion – Automation

[www.smc.eu](http://www.smc.eu)

EMC-P-E21-18-UK