



Expertise – Passion – Automation

Time to get a grip on efficiency

SMC vacuum solutions

Do you feel that you're not getting what you expected from your vacuum system? Maybe you don't have the solution you deserve.

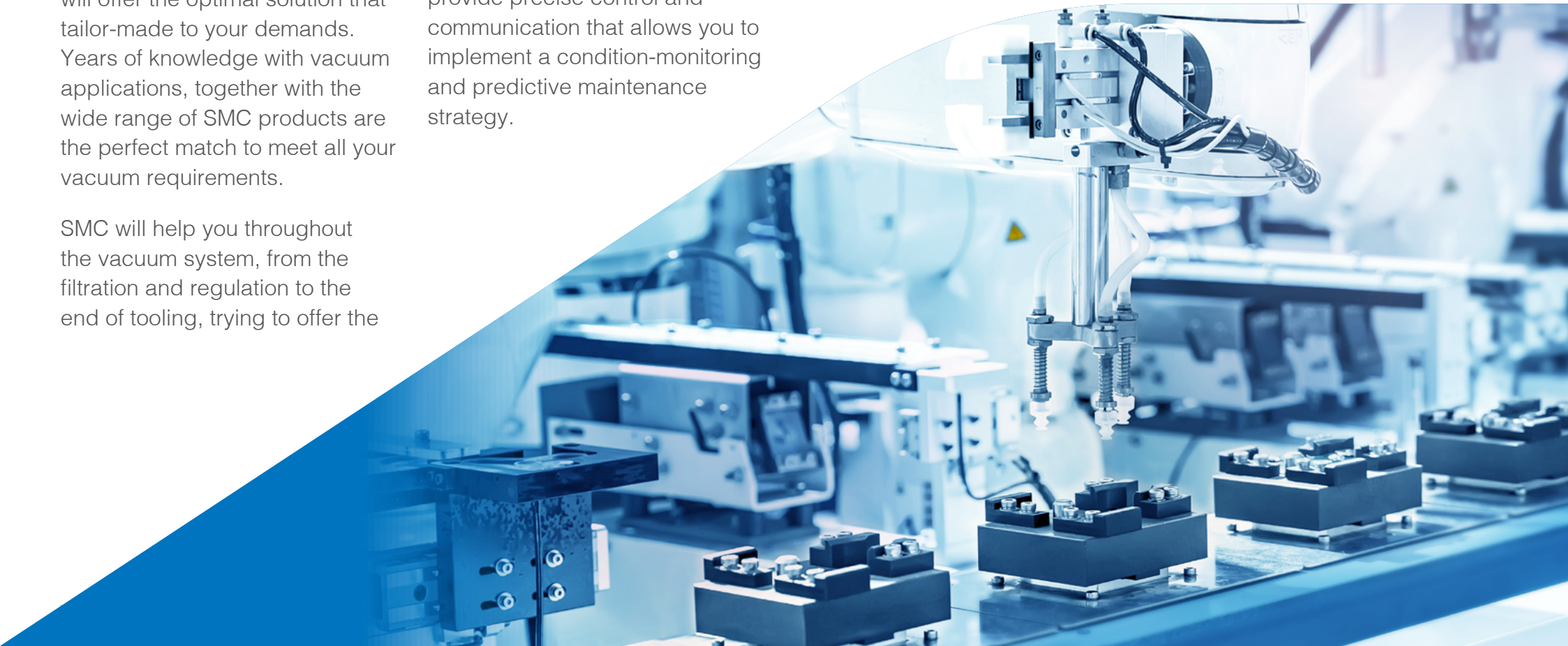
SMC's expertise will help you to achieve the results you demand from your system. Our experts will offer the optimal solution that tailor-made to your demands. Years of knowledge with vacuum applications, together with the wide range of SMC products are the perfect match to meet all your vacuum requirements.

SMC will help you throughout the vacuum system, from the filtration and regulation to the end of tooling, trying to offer the

most efficient and energy-saving solution possible, while giving a high performance.

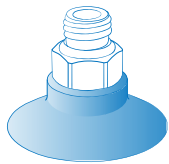
There are many aspects to be aware of when designing a vacuum system, arguably, at the top of the list, are smart vacuum solutions thanks to the capabilities they bring. SMC offers smart manifolds that provide precise control and communication that allows you to implement a condition-monitoring and predictive maintenance strategy.

“SMC is a total solutions provider to optimise performance, cost, energy efficiency and reliability.”



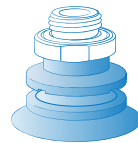
Vacuum pads

Becoming fully acquainted with the workpiece should always be your starting point for any project involving a vacuum handling system. SMC offers a wide variety of solutions to meet all your requirements.



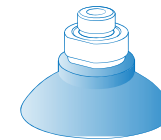
Flat

For the adsorption of general workpieces.



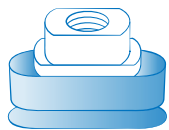
Bellows

For use where there is no space for the buffer (spring type). For the adsorption of workpieces with sloping surface.



Bowl

Ideal for applications where gripping curved workpieces or those with an oil film on a flat surface is required.



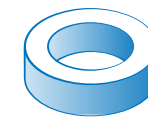
Oval

To be used when the workpiece has limited adsorption surface or is long in length and work is required to locate precisely.



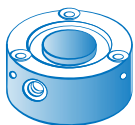
Nozzle

For use when high precision is needed on small light workpieces.



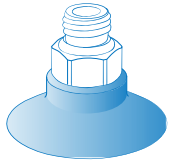
Sponge

For use in irregular, bumpy surfaces where there could be vacuum losses due to difficult grip.



Non-contact

Handle different sizes, materials & shapes gently. Suitable for thin, porous, air-permeable workpieces, with holes, or sensitive to suction traces.



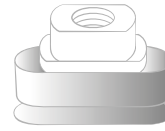
Flat



Bellows



Bowl



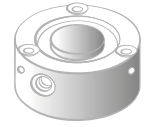
Oval



Nozzle








Sponge

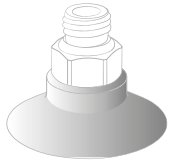


Non-contact

Flat pads

For the adsorption of general workpieces.

		Pad type		Pad size	
+		Standard:	For the adsorption of workpieces with flat and undeformed surface.	Ø 1.5 to 340 mm. Materials NBR, silicone rubber, FKM, conductive silicone rubber, conductive NBR, semiconductive silicone rubber, mark-free NBR, FS61 (fluoro-based rubber), urethane rubber.	
+		Flat with ribs:	For a surface that is likely to deform or for the guaranteed release of a workpiece.		
+		Thin flat:	For adsorption of soft workpieces such as thin sheets or vinyl. Wrinkling or deformation during adsorption is reduced.		
+		Mark-free:	For use where adsorption marks must not be left on workpieces.		
+		Heavy-duty:	For heavy or large workpieces.		



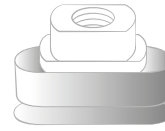
Flat



Bellows



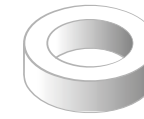
Bowl



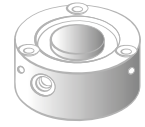
Oval



Nozzle








Sponge



Non-contact

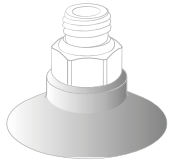
Bellows pads

For use where there is no space for the buffer (spring type). For adsorption of workpieces with sloping surface.

		Pad type		Pad size
+		Standard:	For the adsorption of workpieces with flat and undeformed surface.	Ø 4 to 125 mm.
+		Multi-bellows:	For spherical workpieces or workpieces with sloping surfaces.	
+		Bellows with ribs:	For a surface that is likely to deform or for the guaranteed release of a workpiece.	
+		Mark-free:	For use where adsorption marks must not be left on workpieces.	
+		Heavy-duty:	For heavy or large workpieces.	

Materials

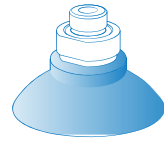
NBR, silicone rubber, FKM, conductive silicone rubber, conductive NBR, semiconductive silicone rubber, mark free NBR, FS61 (fluoro-based rubber), urethane rubber.



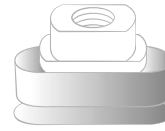
Flat



Bellows



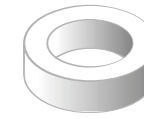
Bowl



Oval



Nozzle



Sponge



Non-contact

Bowl shape pads

Ideal for applications where gripping curved workpieces or those with an oil film on a flat surface is required.



Pad type

Standard:

Diagonal ribs are radially arranged to secure the gripping force in all directions.



Bellows:

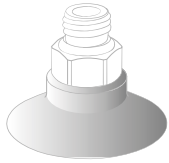
For workpieces in different levels or in sloppy surfaces.

Pad size

Ø 32 to 100 mm.

Materials

FS61 (fluoro-based rubber), urethane rubber.



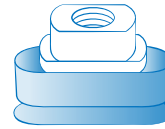
Flat



Bellows



Bowl



Oval



Nozzle



Sponge



Non-contact

Oval pads

To be used when the workpiece has limited adsorption surface or long in length and work is required to locate precisely.



Pad type

Standard:

Tailored for long and narrow workpieces with adsorption surface limitations.



Heavy-duty:

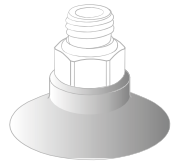
For heavy or large workpieces.

Pad size

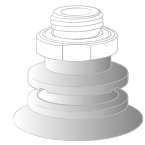
2 x 4 mm (oval) to 30 x 50 mm (oval).

Materials

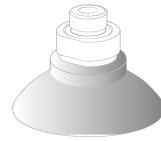
NBR, silicone rubber, FKM, conductive silicone rubber, conductive NBR and urethane rubber.



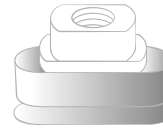
Flat



Bellows



Bowl



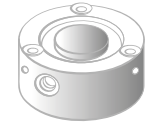
Oval



Nozzle



Sponge



Non-contact

Nozzle pads

For use when high precision is needed on small light workpieces.



Pad type

Standard:

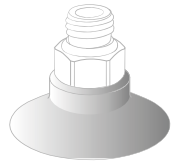
For the adsorption of small components such as IC chips.

Pad size

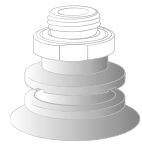
Ø 0.8 to 1.1 mm.

Materials

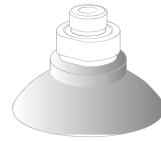
NBR, silicone rubber, FKM, conductive silicone rubber, conductive NBR and urethane rubber.



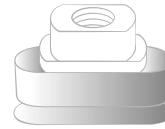
Flat



Bellows



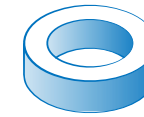
Bowl



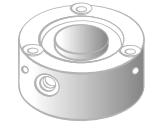
Oval



Nozzle



Sponge



Non-contact

Sponge pads

For use in irregular bumpy surfaces where there could be vacuum losses due to difficult grip.



Pad type

Standard:

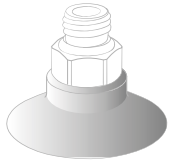
For workpieces with bumps.

Pad size

Ø 4 to 15 mm.

Materials

CR (Conductive rubber).



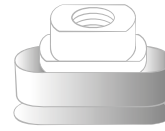
Flat



Bellows



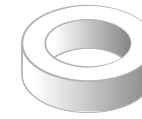
Bowl



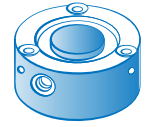
Oval



Nozzle



Sponge



Non-contact

Non-contact pads

Handle different sizes, materials & shapes gently. Suitable for thin, porous, air-permeable workpieces, with holes, or sensitive to suction traces.



Pad type

Standard:

Suitable for thin, porous, air-permeable workpieces, with holes, or sensitive to suction traces.

Pad size

Ø 20 to 80 mm.

Materials

Aluminium, resin, stainless steel.

Vacuum ejectors

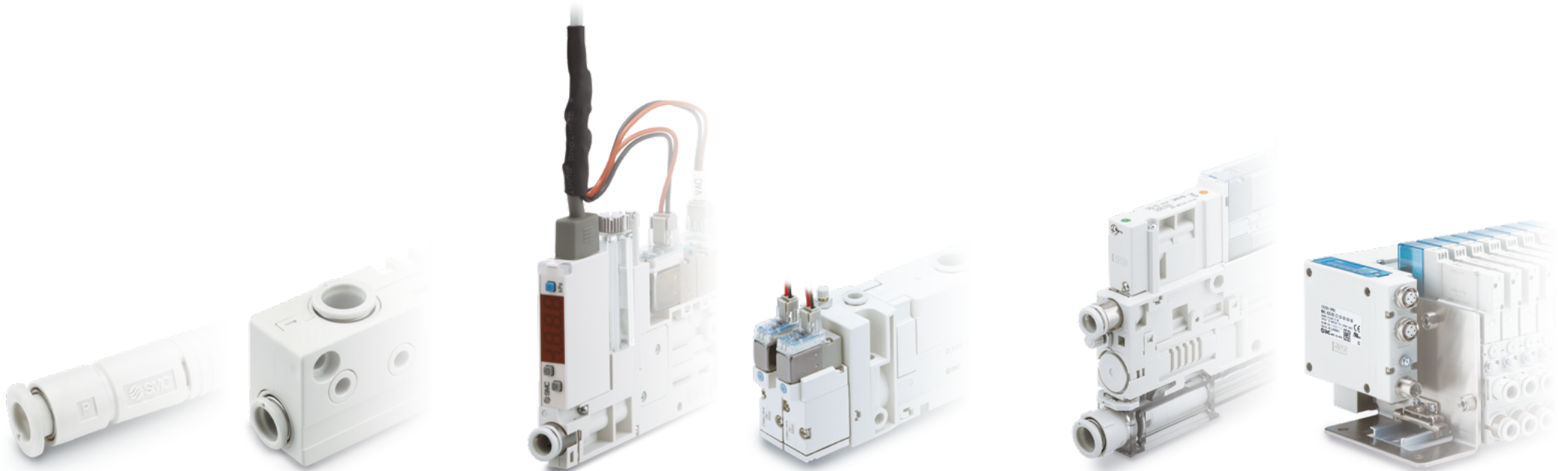
Do you need to mount ejectors at the robots' moving parts? Do you need to generate vacuum while consuming less air at the same time? Do you need to monitor your ejectors remotely?

SMC's wide range of ejectors meet all of your requirements so you have the most efficient solutions.

Simple

**Integrated valves
+
Pressure switch**

**Integrated valves
+
Pressure switch
+
Fieldbus communications**



Simple

Integrated valves
+
Pressure switch

Integrated valves
+
Pressure switch
+
Fieldbus communications

In-line type – ZU□A Series

- Max. flow rate: 16 l/min (ANR)
- Max. vacuum pressure: -90 kPa
- Nozzle diameters: 0.3, 0.4, 0.5 and 0.7 mm
- Dimensions:
 - Overall length 47 to 59 mm
 - Ø 8.2 to 10.4 mm.
- Weight: 2.4 to 4.3 g.



Box/Body-ported type – ZU□A Series

- Max. flow rate: 155 l/min (ANR)
- Max. vacuum pressure: -90 kPa
- Nozzle diameters: 0.5, 0.7, 1, 1.3, 1.5, 1.8 and 2 mm
- Multiple piping variations:
 - One-touch fittings
 - Screw-in connections (G/Rc/NPT).
- 4 mounting types: direct, standard bracket, L-bracket or DIN rail.



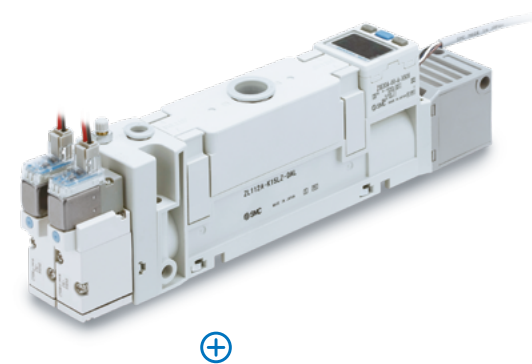
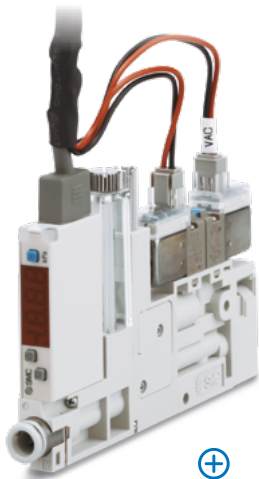
Simple

**Integrated valves
+
Pressure switch**

**Integrated valves
+
Pressure switch
+
Fieldbus communications**

Compact vacuum unit ejector system – ZQ□A Series

- Max. flow rate: 22 l/min
- Max. vacuum pressure: -80 kPa
- Nozzle diameters: 0.5, 0.7, 1 mm
- Ejector, pump and manifold system in a single unit
- Energy-saving digital vacuum switch for up to 90 % air consumption reduction
- IO-Link for online parameterization and extraction of numeric data.



Multistage ejector – ZL series

- Max. flow rate: 600 l/min
- Max. vacuum pressure: -93 kPa
- Nozzle diameters: 1.2, 1.5 and 1.9 mm
- The ideal solution for robots' moving parts
- High suction flow with 3 stage diffuser construction
- Energy-saving function is available
- IO-Link for online parameterization and extraction of numeric data.

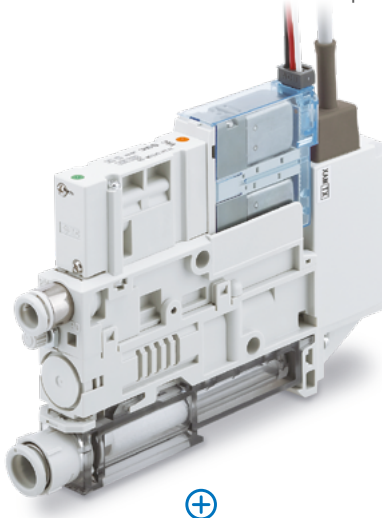
Simple

Integrated valves
+
Pressure switch

Integrated valves
+
Pressure switch
+
Fieldbus communications

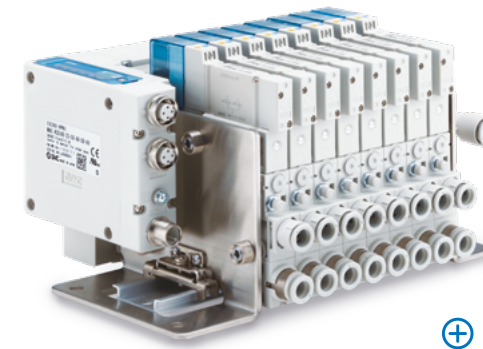
All-in-one vacuum unit – ZK2-A Series

- Max. flow rate: 89 l/min
- Max. vacuum pressure: -91 kPa
- Nozzle diameters: 0.7, 1, 1.2, 1.5 mm
- Highly configurable with valve control and fieldbus communication such as IO-Link, PROFINET, EtherNet/IP, EtherCAT®
- Energy-saving digital vacuum switch and a 2-stage ejector
- High-noise reduction silencer
- N.O. supply valve holds vacuum when the power goes out.



Vacuum manifold for fieldbus system – ZKJ Series

- Max. flow rate: 74 l/min
- Max. Vacuum pressure: -89 kPa
- Nozzle diameters: 0.7, 1, 1.2, 1.5 mm
- Control and monitor up to 16 ejectors via PROFINET, IO-Link, EtherNet/IP, EtherCAT®
- Energy-saving function, M12 connector and easy filter maintenance
- IP65 protection enclosure for medium/harsh environments
- N.O. supply valve holds vacuum when the power goes out.



Vacuum gripper for collaborative robots

Your right arm

Robots and humans are forced to work hand in hand: cobots are running more and more production plants, humans are contributing their skills to strategic thinking, invention and detail.

We believe that SMC can be “Your right arm” in Robotics, our international teams of Experts are ready to support you with your daily challenges, and our local and European technical centres are ready to develop any customised solution you might need.

Pneumatic gripper



Electric gripper



Pneumatic gripper

Electric gripper

+  **UNIVERSAL ROBOTS**



+ **YASKAWA**



+  **mitsubishi electric**
Changes for the Better



+ **FANUC**



+  **Kawasaki**
Powering your potential



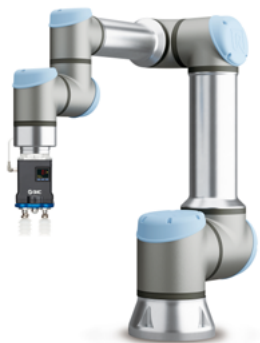
+ **OMRON**



Pneumatic gripper

Electric gripper

⊕  UNIVERSAL ROBOTS



⊕ **FANUC**



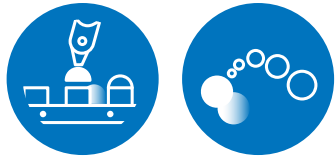
⊕ **OMRON**



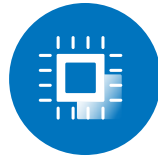
⊕ **YASKAWA**



Industry applications



Food & Life Science



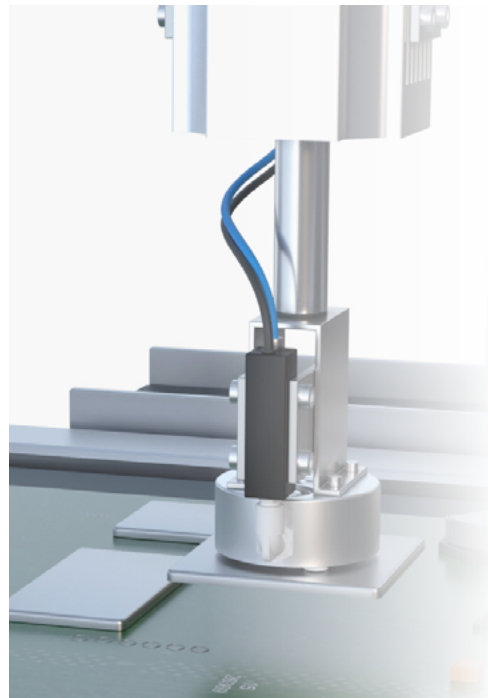
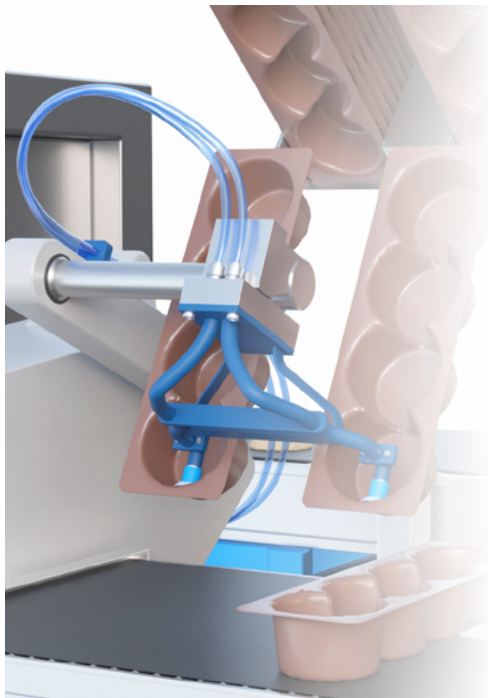
Electronic

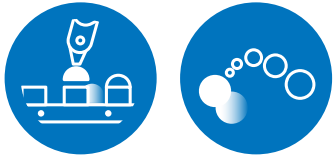


Automotive

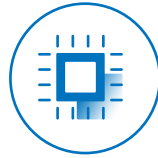


Packaging





Food & Life Science



Electronic

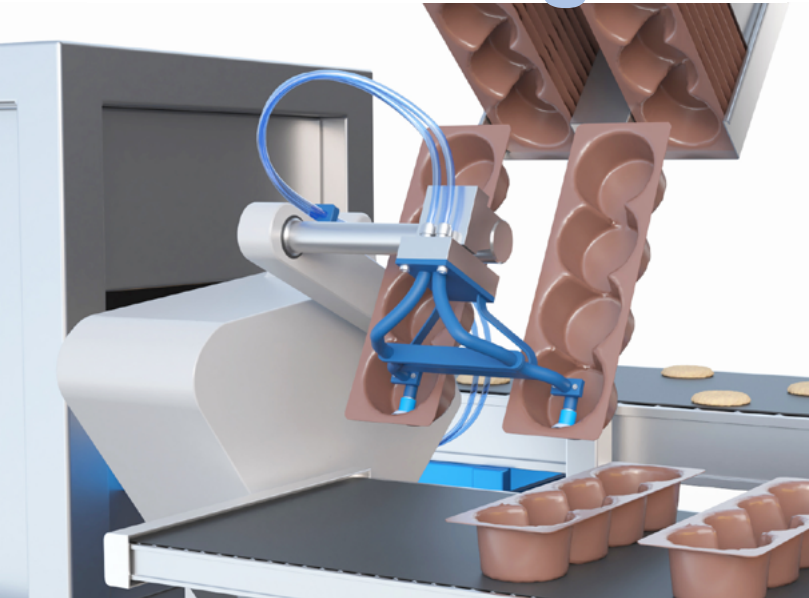


Automotive



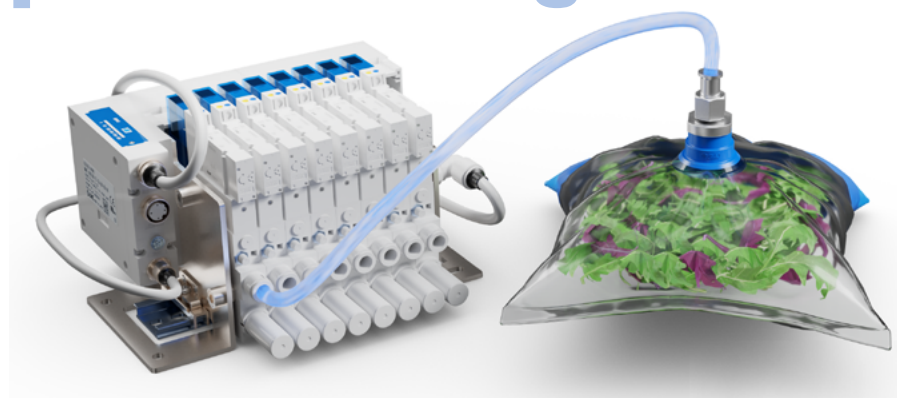
Packaging

food handling



Ensure the adequate handling of deformable workpieces with the **ZP3P-JT Series**.

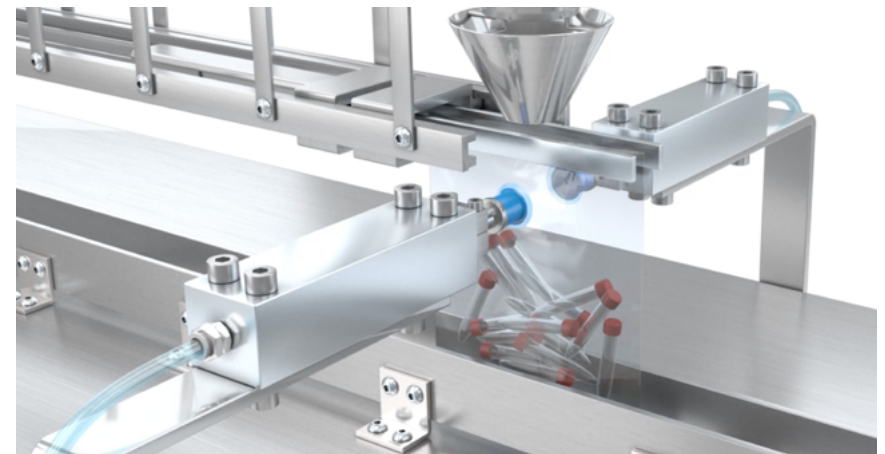
pouch handling



Blue colour pads are used as it cannot be confused with any kind of food – **ZP3P Series**
Suitable for the handling of deformable food packages – **ZKJ ejector**

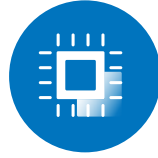
medical environments

Use our products safely in food and medical environments. **ZHV Series** can be used to amplify the flow.





Food & Life Science



Electronic

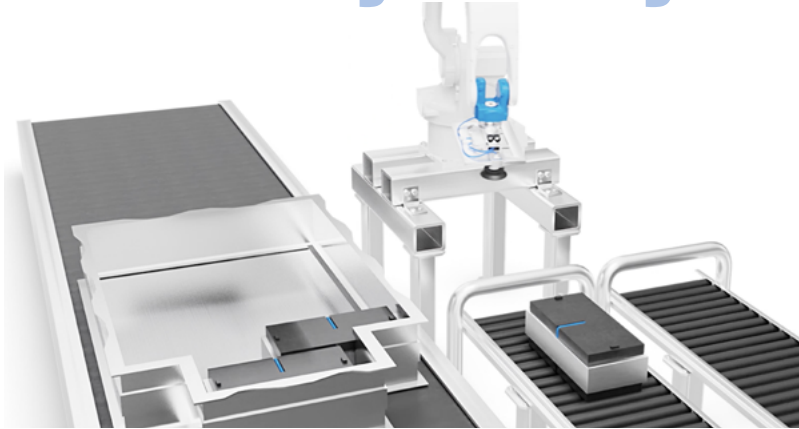


Automotive



Packaging

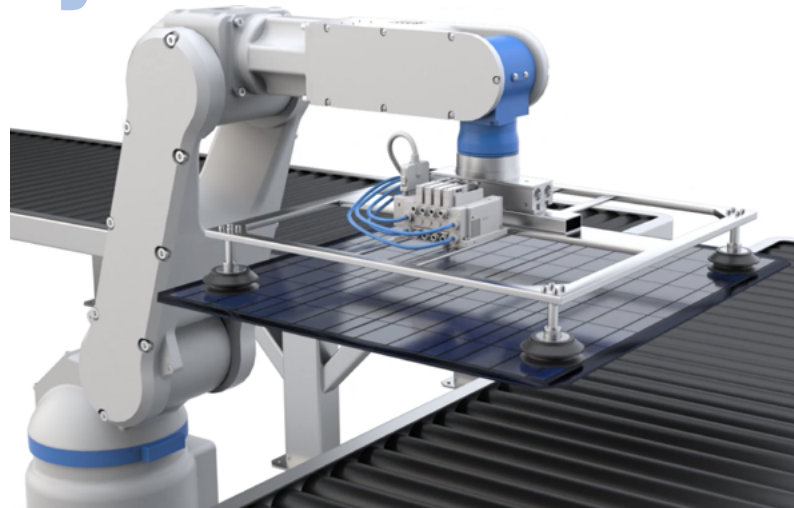
secondary battery



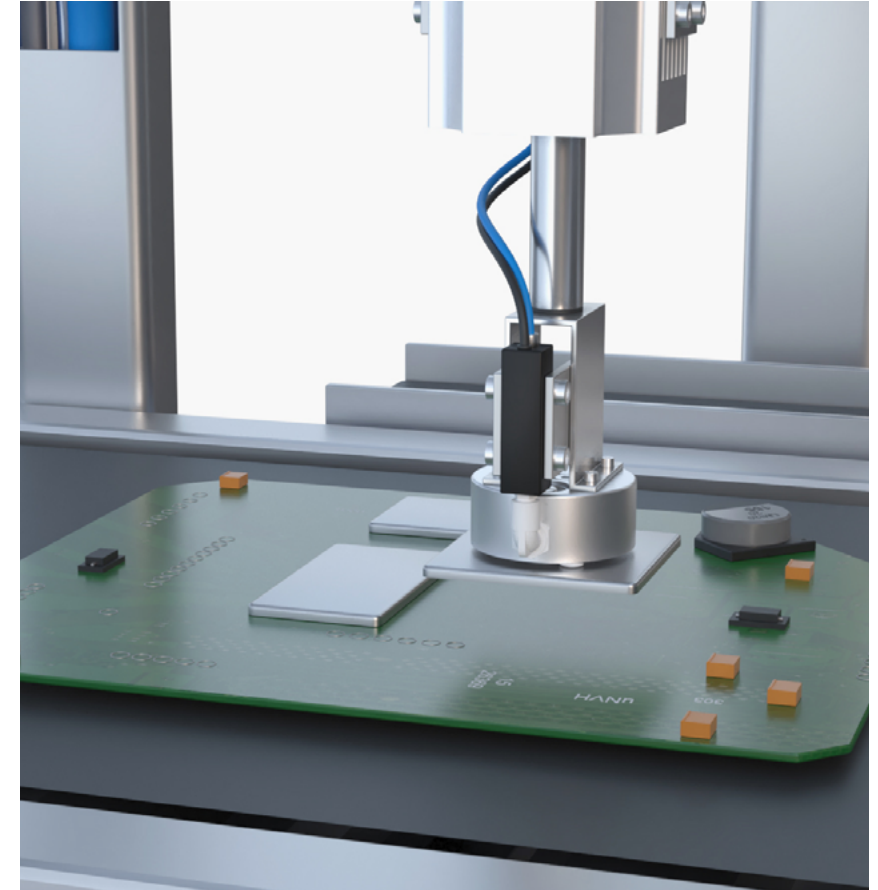
Manipulate any product throughout the battery manufacturing process without leaving any mark. For all kind of parts, small to larger ones, use [ZP3 Series](#). Energy-efficient ejector. Vacuum is maintained without air consumption – [ZL Series](#).

panel conveyors

Suitable for handling conveyors on solar industry. Handle solar panels without harming them with the [ZP3E](#) and [ZK2□A Series](#). Smaller parts can be handled on conveyors with the [ZP2-□□AN Series](#).



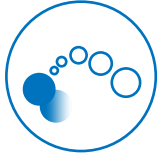
non-contact handle



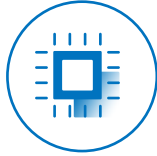
Manipulate delicate surfaces with non-contact technology – [ZNC Series](#).



Food & Life Science



Electronic

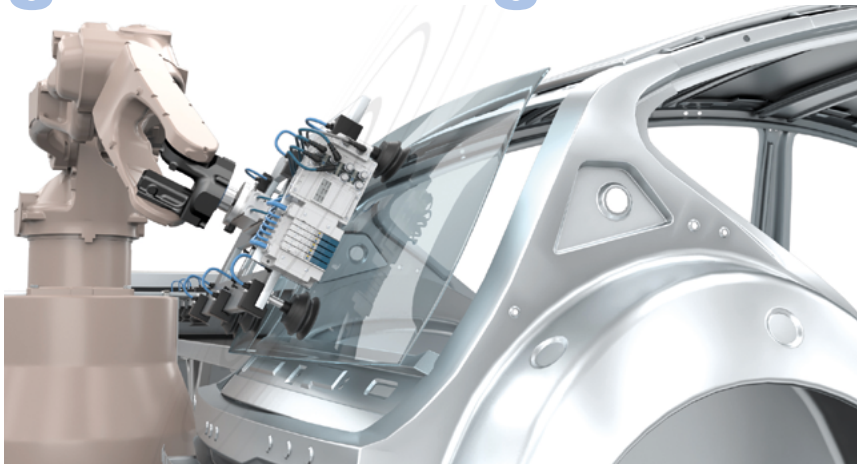


Automotive



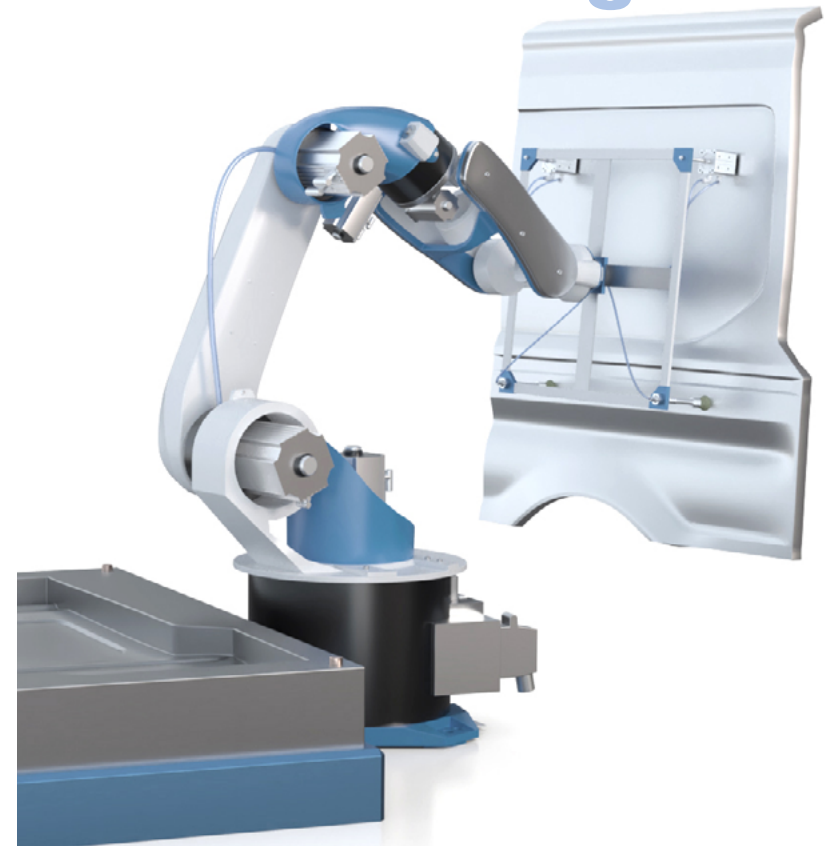
Packaging

glass handling



Manipulate delicate workpieces without harming them with the **ZP2 Series** with the security that the **ZK2□A Series** offers.

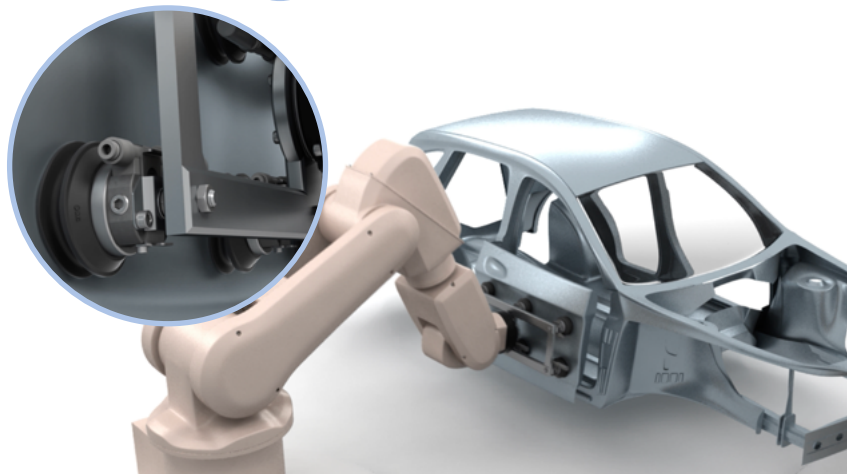
vertical handling

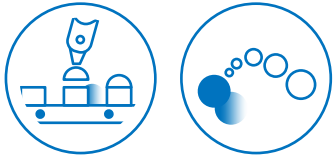


Handle heavy workpieces vertically with the **ZP3M Series** in combination with **MHM Series**. **ZKJ Series** assures drop prevention.

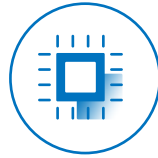
auto part handling

Space is a must for vacuum generation assistance. Benefit from daisy-chain piping with our vacuum pad with ejector – **ZHP Series**





Food & Life Science



Electronic

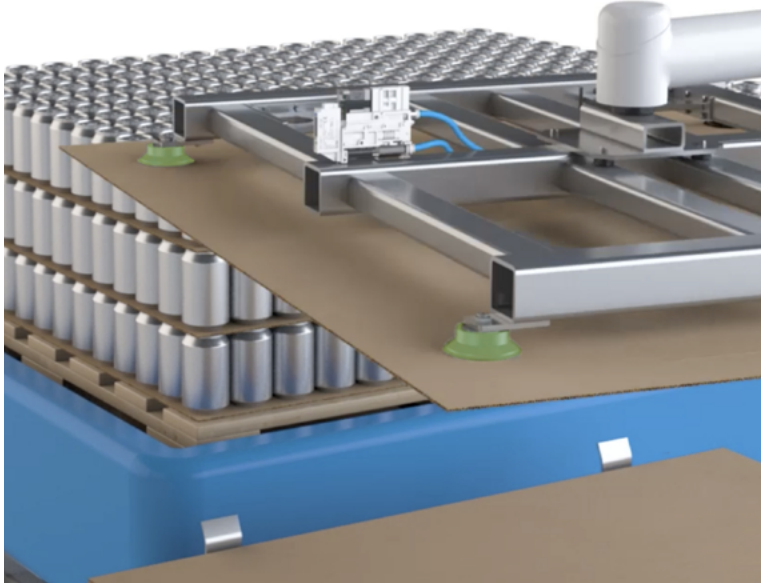


Automotive



Packaging

paletising



Handle abrasive surfaces with high abrasion resistance pads **ZP3C Series** in combination with the **ZK2□A Series**, great for palletising.

case erecting



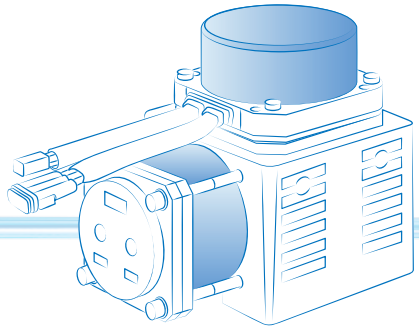
Handle cardboard workpieces with efficiency and accuracy – **ZP Series**.

case packing

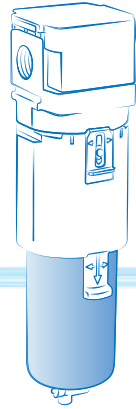
The combination manifolds offer an all-in-one solution for positive and negative pressure of your application, with wireless communication available. **JSY & ZK2□A Series** with **ZP** pads.



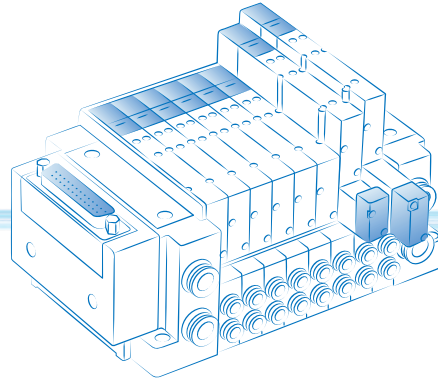
Complete solution



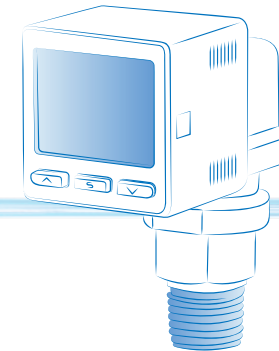
Compressor



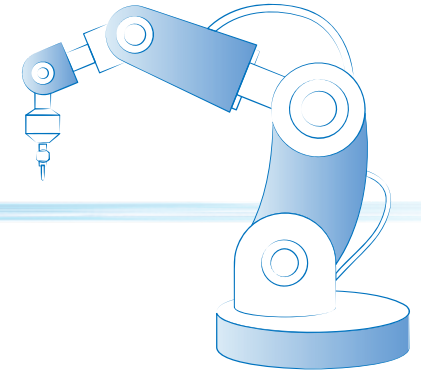
Filters



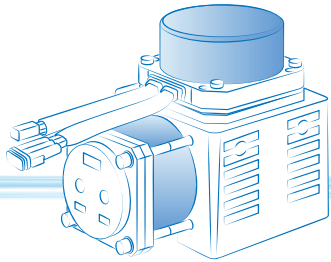
Valves & Control



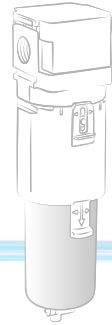
Sensors & Regulators



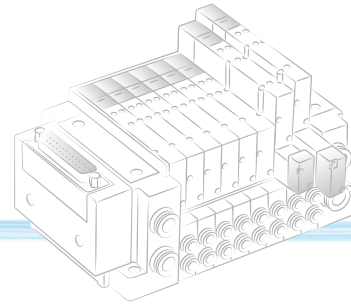
End-of-arm tooling



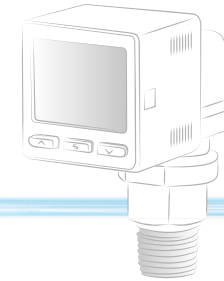
Compressor



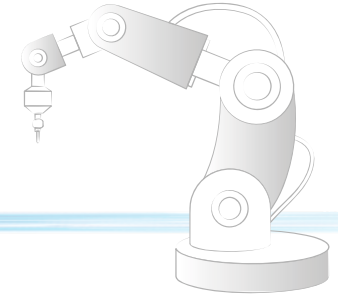
Filters



Valves & Control



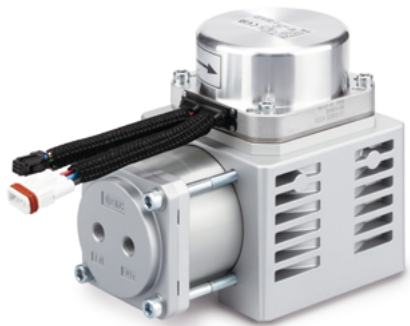
Sensors & Regulators



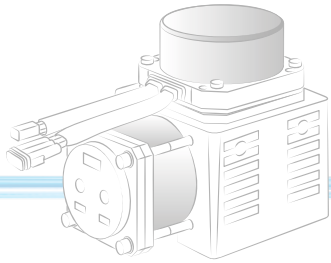
End-of-arm tooling

Compact compressor

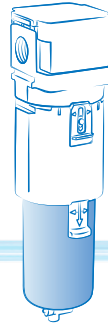
CRP Series



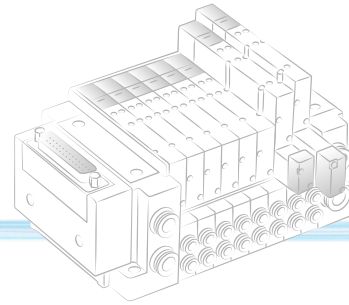
- Electric compressor or vacuum pump on the same device:
 - Max. discharge pressure: 0.55 MPa
 - Max. vacuum pressure: -70 kPa
 - Flow rate: 10 l/min.
- Compact and lightweight solution:
 - W 154 mm x H 134 mm x D 100 mm
 - 3.5 Kg.
- Controller with alarm functions to check for trouble in the functioning of the machine
- Usable in continuous operation.



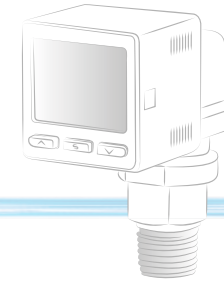
Compressor



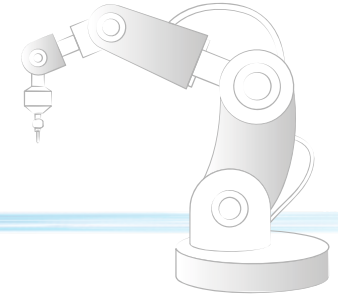
Filters



Valves & Control



Sensors & Regulators



End-of-arm tooling

In-line air filter with one-touch fitting ZFC Series



- Wide range of applicable tubing
- Lock mechanism
- Easy piping
- Interchangeability
- Flexible mounting orientation
- Lightweight
- Variety of colours easy visualisation.

Vacuum filter AFJ-D Series

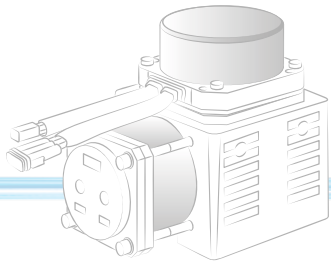


- Large flow type AFJ-T, up to 660 l/min, for dust removal
- Water drop removal type AFJ-S, up to 500 l/min, for both dust and water droplets removal
- Filtration rating: 5, 40, 80 μm
- Port sizes: from 1/8 to 1/2
- Standard options: Bracket, bowl material, selectable flow direction.

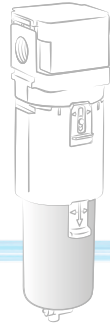
Drain separator for vacuum AMJ Series



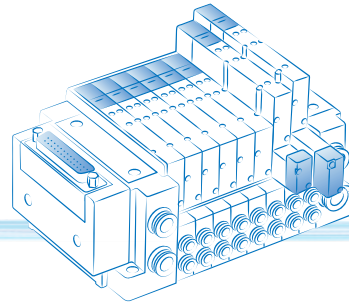
- Effective for removing water droplets from the air sucked into vacuum pumps and ejectors
- 90 % of droplets can be removed
- Possible to discharge the drain manually after breaking the vacuum
- Even when saturated with water, there is almost no drop in pressure.



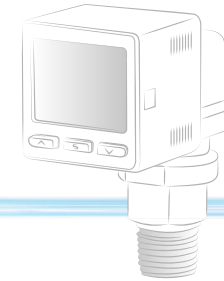
Compressor



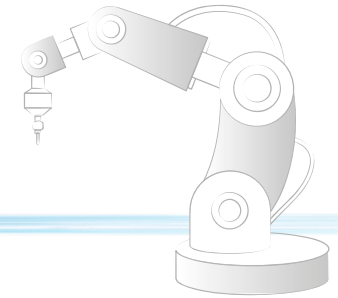
Filters



Valves & Control



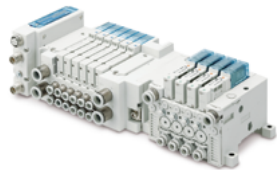
Sensors & Regulators



End-of-arm tooling

All-in-one solution for positive and negative pressure

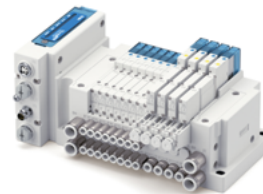
JSY & ZK2□A Series



- Complete solution to control valves and vacuum ejectors integrated into a single manifold
- Max. suction flow rate: 89 l/min
- Vacuum pressure of -91 kPa
- Control and monitor up to 32 outputs via a wide variety of serial interface communication protocols
- Fieldbus communications for both valves and ejectors that support fieldbus communication. IO-Link compatible.
- High flow rate in a compact body: Up to 567 l/min.

Valve manifold integrated with ejector system

JSY1000-E Series



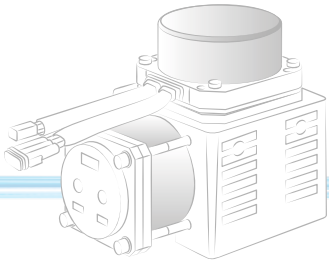
- Combination manifold for vacuum and positive pressure
- Max. valve flow rate: 244 l/min
- Max. suction flow rate: 21 l/min
- Vacuum pressure of up to -90 kPa
- Energy-saving function, air is supplied and exhausted intermittently when vacuum decreases
- Fieldbus communications for both valves and ejectors that support fieldbus communication. EtherCAT®, IO-Link and PROFINET compatible.
- With pilot air control unit
- Up to 24 stations combined as up to 12 valves and 12 ejectors.

Vacuum saving valve

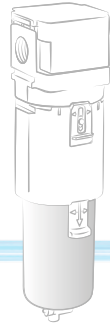
ZP2V Series



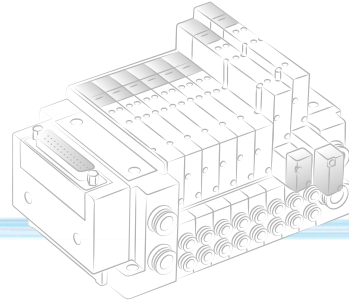
- When there is no workpiece air consumption is restricted
- Connection thread size for the pad: M5, M6, M8, R1/8, G1/8, NPT1/8
- Fixed orifice size: 0.3, 0.5, 0.7, 1.0 mm
- Maximum operating pressure range: 0 to 0.7 MPa
- Ambient and fluid temperature: 5 to 60 °C (no freezing)
- Element nominal filtration rating: 40 µm.



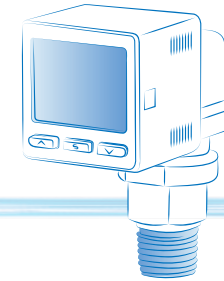
Compressor



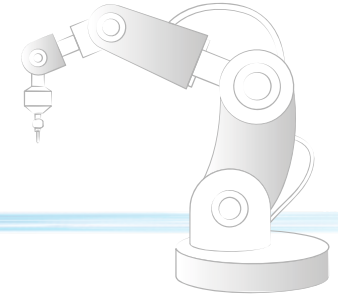
Filters



Valves & Control



Sensors & Regulators



End-of-arm tooling

Electro-pneumatic regulator/Electronic vacuum regulator

ITV Series



- Dynamic control of air pressure by electrical signals
- Exchange data and parameters remotely via network
- Compact and lightweight design
- Power consumption: 4 W or less
- Communication models: IO-Link, analogue (current and voltage), digital signals, preset input, CC-Link, IO-Link.

Vacuum regulator

IRV Series



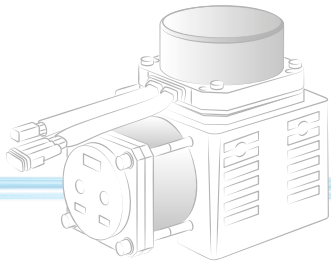
- Maximum flow rate is now more than twice the flow rate of the existing model: 140 l/min (ANR), 240 l/min (ANR)
- 20 % mass reduction
- Easy to attach/detach the pressure gauge or digital pressure switch due to attachment by clip.

High-precision digital pressure switch

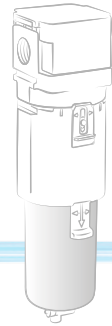
ZSE20 Series



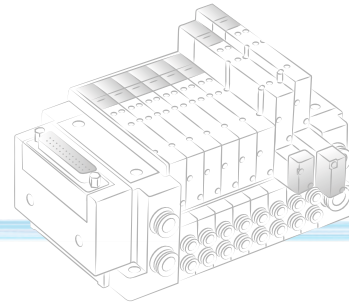
- Pressure range: -101 to 100 kPa
- Repeatability: ± 0.2 % F.S.
- Response time: 1.5 ms or less
- Consumption: 25 mA or less.



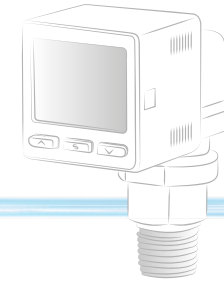
Compressor



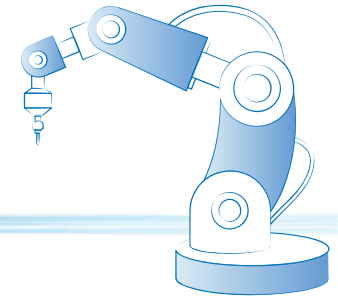
Filters



Valves & Control



Sensors & Regulators



End-of-arm tooling

Vacuum pad with ejector ZHP Series



- Pad sizes: Ø 63 - Ø 80 mm
- Shapes: bellows type with groove, flat type with groove
- Materials: NBR, silicone rubber, urethane rubber, FKM.

Free-mount cylinder with vacuum pad ZC(D)UK Series



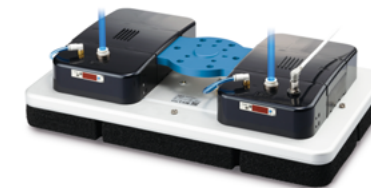
- Free-mount cylinder with vacuum passage for vacuum pads
- Not necessary to provide vacuum tubing space at the end of the rod.

Vacuum flow ZHV Series



- x4 air flow amplification when blowing
- x3 air flow amplification when suctioning
- Discharge flow rate up to 6820 l/min
- Suction flow rate up to 5270 l/min with a vacuum pressure of -6 kPa
- Fluid passage diameters [mm]: Ø 13, Ø 21.6, Ø 30 and Ø 42
- Possibility to adjust the suction and discharge flow rate
- Compact and lightweight design
- Air-driven, maintenance-free.

Vacuum gripper system ZGS Series



- Suitable for the palletizing and depalletizing of corrugated cardboard, etc
- Usable in general purpose robots and collaborative robots
- Ejector unit: combines all functions required for adsorption. (Ejector, supply valve/release valve, silencer, pressure switch)
- Can be used immediately by simply connecting 1 electrical cable and air piping
- Weight: 3.9 kg. Reduces the load on robots
- CO₂ emissions (air consumption): max. 15 % reduction
- Ejector with new design: reduced air consumption 270 l/min (ANR) → 227 l/min (ANR).

SMC Business Continuity Plan

Discover more on
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.

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

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.

Production BCP

Ensure customer order fulfilment

Reliable delivery for you thanks to our 9 global logistic centres and production sites in 30 countries, 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

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



Expertise – Passion – Automation

www.smc.eu
VACUUM-B-UK