



Expertise – Passion – Automation



**Maximise efficiency,
minimise downtime**

Dust collector & Bulk handling system

Mastering the art of conveying: efficiency, cleanliness and sustainability with SMC

Conveying, a technique as versatile as it is challenging

At the heart of countless industries, conveying has become a cornerstone for the efficient movement of powders, granules and bulk materials. However, the design of a conveying installation goes beyond simple mechanics. It is a delicate balance between functionality, efficiency and sustainability, where every component plays a crucial role.

At SMC, we understand the challenges you face in designing and implementing a conveying system. Our commitment is to provide you with the tools and expertise to create a system that not only meets your demands on productivity, but also exceeds your expectations in terms of:

- **Optimising product flow**
- **Preservation of product quality**
- **Dust and contaminant mitigation**
- **Efficient filter element cleaning**
- **Precise control of compressed air.**

SMC: Your partner for exceptional conveying

At SMC, we not only provide you with high quality components, but also the comprehensive support you need to optimise your conveying system.

Together, we can build a cleaner, more sustainable future for conveying. With SMC solutions, you can achieve greater efficiency and reduce your environmental impact.

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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, 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.



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.



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.

Efficiency and productivity are the cornerstones of success. Every moment of equipment downtime represents a loss of opportunity and potential revenue. SMC is your trusted partner in unlocking the full potential of your operations.

SMC products streamline processes, optimise workflows and minimise maintenance downtime, ensuring that your equipment operates at peak performance and consistently delivers high-quality results.

With SMC, you can increase your productivity, minimise maintenance demands and increase uptime.



Energise your efficiency

Minimise air consumption, save energy, improve the efficiency of your operations, increase productivity and reduce environmental impact.



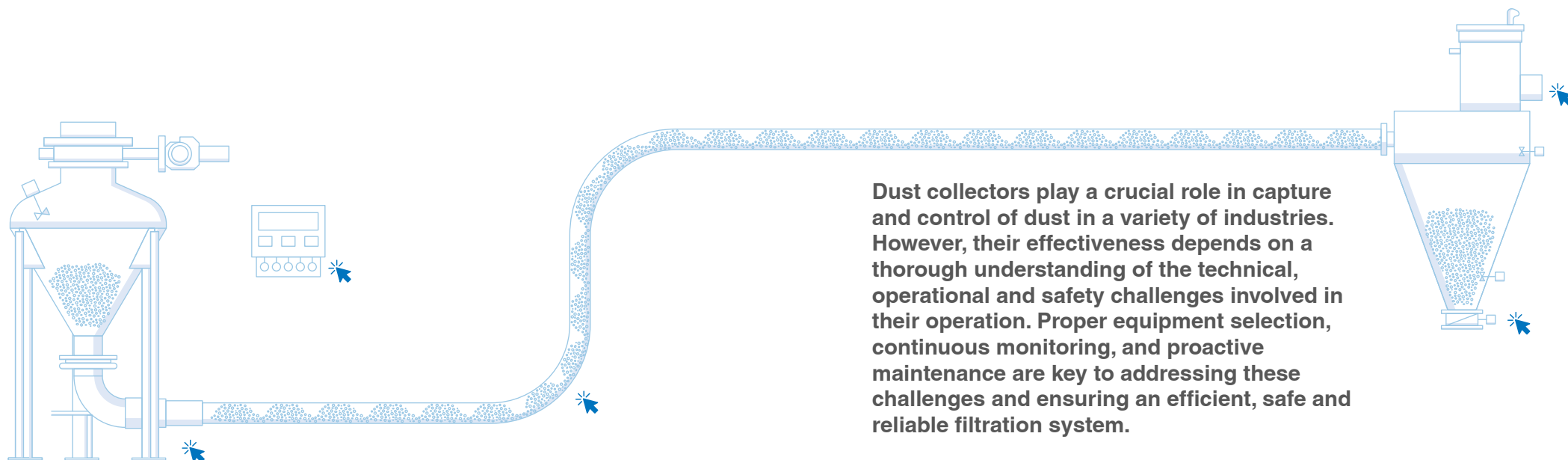
Minimise maintenance demands

Keep replacement and repair costs to a minimum thanks to durability and reliability.



Increase uptime

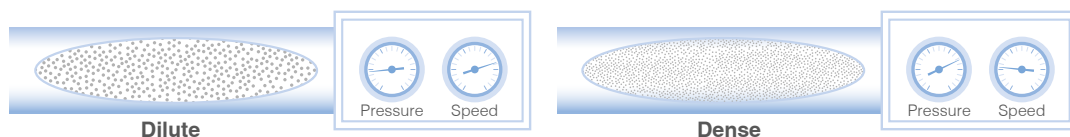
Boost productivity by achieving greater operational efficiency, increasing profitability and improve customer satisfaction.



Dust collectors play a crucial role in capture and control of dust in a variety of industries. However, their effectiveness depends on a thorough understanding of the technical, operational and safety challenges involved in their operation. Proper equipment selection, continuous monitoring, and proactive maintenance are key to addressing these challenges and ensuring an efficient, safe and reliable filtration system.

Bulk products have properties that vary greatly depending on grain size and distribution, slope angle, moisture content, temperature and friction resistance. To describe them, different characteristics such as “abrasive”, “cohesive”, “delicate”, “hot”, “wet”, “non-flowing”, etc. are defined. We are talking about products with grain sizes ranging from microns to around 20 mm. The transport and storage of these bulk products presents both a logistical and technological challenge.

The transport of these materials is typically carried out using mechanical systems (by vibration, screw conveyors, bucket elevators, trays, etc.) or pneumatic systems. In the latter, the material is moved by means of compressed air. Pneumatic transport can take place in a dilute phase (high velocity at a lower pressure), for finer and dry products or a dense phase (low velocity at a higher pressure), for more concentrated and abrasive products.



At SMC we know what we are talking about when it comes to bulk handling and dust collectors, that's why outlined here you can find different solutions for your problems in different zones of the installation. Click and solve the problem.

Silos and hoppers

These are the places where the product accumulates and the design of the angle of inclination of the mouth is key.

! Problems

MATERIAL STICKING TO THE SILO/HOPPERS WALLS

SMC solutions ✓



Impact cylinders help to eliminate blockages in silos and hoppers by fluidisation.



Air shocker
XT316 Series
+



Dry air blast helps to eliminate blockages in silos and hoppers by fluidisation.

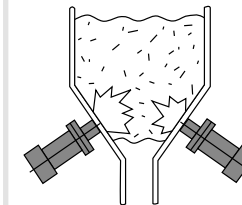


Membrane air dryer
IDG Series
+

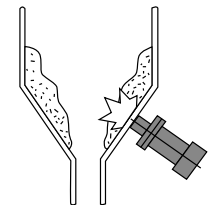


Nozzle
KN Series
+

Applications



Bridge



Adhesion

DIFFICULT TO TRANSPORT THE MATERIAL OVER LONG DISTANCES OR CLOGGING OCCURS



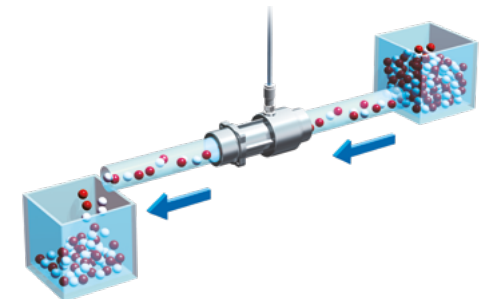
Conveyor support booster for the elimination of clogging and blockages in the movement of material.



Safety speed control valve
ASS Series
+



Vacuum flow
ZHV Series
+



Transportation and pipelines

Conduits through which the product is channelled. They usually incorporate boosters and relay stations to control the pressure and the normal flow of product. They also incorporate shut-offs and diverters to direct the material.

! Problems | SMC solutions ✓

**UNEVEN SUCTION
OPERATION DEPENDING ON
THE PRODUCTION LEVEL**



Capacity control of suction systems according to the production load.



**Smart positioner, lever
type
IP8001 Series**
+



**Cylinder
C96 Series**
+

**NEED FOR MANUAL
ADJUSTMENT OF
TRANSPORT PARAMETERS
ON SITE**



Proportional parameter management in pneumatic conveying pressure regulation.



**Electro-pneumatic
regulator/Electronic
vacuum regulator
ITV Series**
+

**ADHESIONS OF MATERIAL
ON THE WALLS OF THE
DUCTS**



Elimination of the water content in the compressed air fed to the system for conveying.



**Membrane air dryer
IDG Series**
+



**Refrigerated air dryer
IDFA Series**
+



**Water separator
AMG Series**
+

Control system

Centralised management of the entire process. Monitoring of inputs and activation of the different outputs to control the transport process.

! Problems | SMC solutions ✓

**VALVES AND ACTUATOR
ELEMENTS IN DIFFICULT TO
ACCESS LOCATIONS**



Centralisation of electro-pneumatic signals to facilitate control and maintenance. Improves the OEE indicator by reducing maintenance demands.



Fieldbus unit
EX600 Series
+



Fieldbus unit
EX260 Series
+



Wireless system
EX600-W Series
+

Dust collector

Dust collectors are essential to ensure a clean and safe working environment through air filtration.

How much compressed air do my filters need every day and how much does clean air really cost me?

SMC has set out to help you clean your air filters as efficiently as possible and drastically reduce your compressed air consumption and therefore your costs and CO₂ emissions.

! Problems | SMC solutions ✓

HOW MUCH IS SPENT ON CLEANING THE FILTERS AND WHETHER OR NOT THE FILTER IS CLEANED EFFICIENTLY IS UNKNOWN



Continuous monitoring of energy costs for filter cleaning and measurement of deviations.



Digital flow switch
PF3AH Series
⊕

THERE IS NO CENTRALISED CONTROL SYSTEM ALLOWING CONTINUED MONITORING AND MEASUREMENT OF FACTORS LIKE THE OPERATING FREQUENCY OF CONTROL VALVES OR THE CONDITION OF FILTERS



Diagnosis of the status and counting of operating cycles of the filter bags automation elements. Implementation of changes for preventive maintenance.

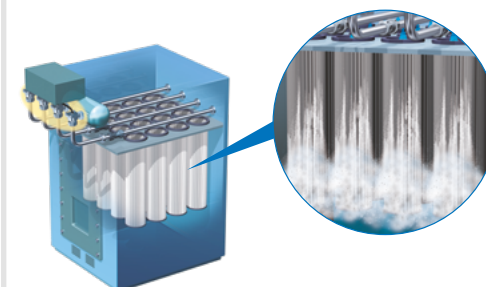


Fieldbus unit
EX600 Series
⊕



Wireless system
EX600-W Series
⊕

Applications



! Problems | SMC solutions ✓

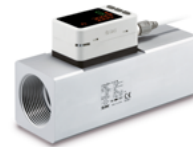
ACTIVATION OF FILTER CLEANING BY TIME, RATHER THAN WHEN DEEMED NECESSARY, RESULTS IN HIGHER AIR CONSUMPTION.



Activate cleaning when a predetermined level of dirt is detected in the filter bags, by installing an external differential pressure switch with an adjustable display, which allows the saturation level to be identified. In this way, cleaning is only activated when a pressure drop is detected.



Controller
VXFC Series
⊕



Digital flow switch
PF3AH Series
⊕



Low differential pressure sensor
PSE Series
⊕



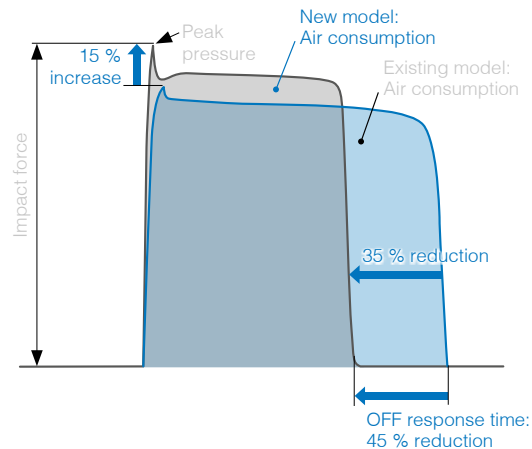
Pulse valve for dust collector, solenoid valve type
JSXF Series
⊕



Pulse valve for dust collector, SMARTVENT type
JSXF-P Series
⊕



Pulse valve for dust collector, air operated type
JSXFA Series
⊕



- The design of our new JSXF series valves offers you extensive improvements:
- Approx. 15 % higher peak pressure due to low pressure loss caused by the geometry
 - Cleaning impact power is stronger
 - Faster shut-off reduces the total air consumption of the blowing pulse by up to 35 % and prevents further dust turbulence, which can settle on the filter elements again
 - Long service life: 10 million cycles or more (JSXF□□□-06)
 - Atex compliant (JSXF and JSXFA Series).

! Problems | SMC solutions ✓

**EXCESSIVE TIME TO
DETECT THE CONDITION
OF THE VALVES IN DUST
COLLECTOR SYSTEM**



Broken diaphragm detection system. Drastic reduction of time taken for corrective maintenance.



Controller
VXFC Series
+



Digital flow switch
PF3AH Series
+



Pulse valve for dust collector, solenoid valve type
JSXF Series
+

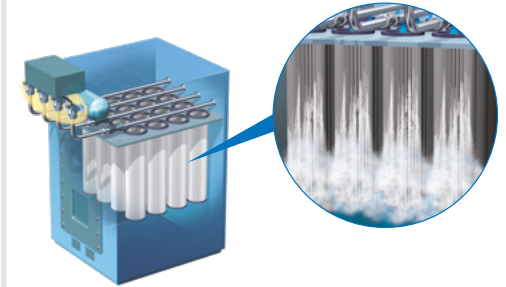


Pulse valve for dust collector, SMARTVENT type
JSXF-P Series
+



Pulse valve for dust collector, air operated type
JSXFA Series
+

Applications



! Problems | SMC solutions ✓

CONTAMINANT INGRESS INTO THE TEXTILE FILTER BAGS



Control and elimination of problems caused by water in compressed air installations. In this way, we will gain a longer life of the filter element textile material as well as other components that form part of the bag cleaning system. This also reduces maintenance costs.



Water separator
AMG Series
+

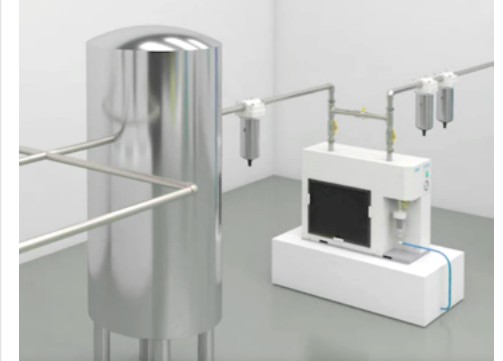


Water separator
AFF Series
+



Refrigerated air dryer
IDFA Series
+

Applications



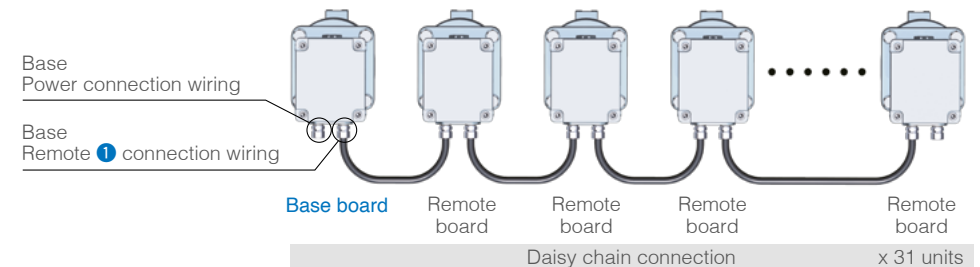
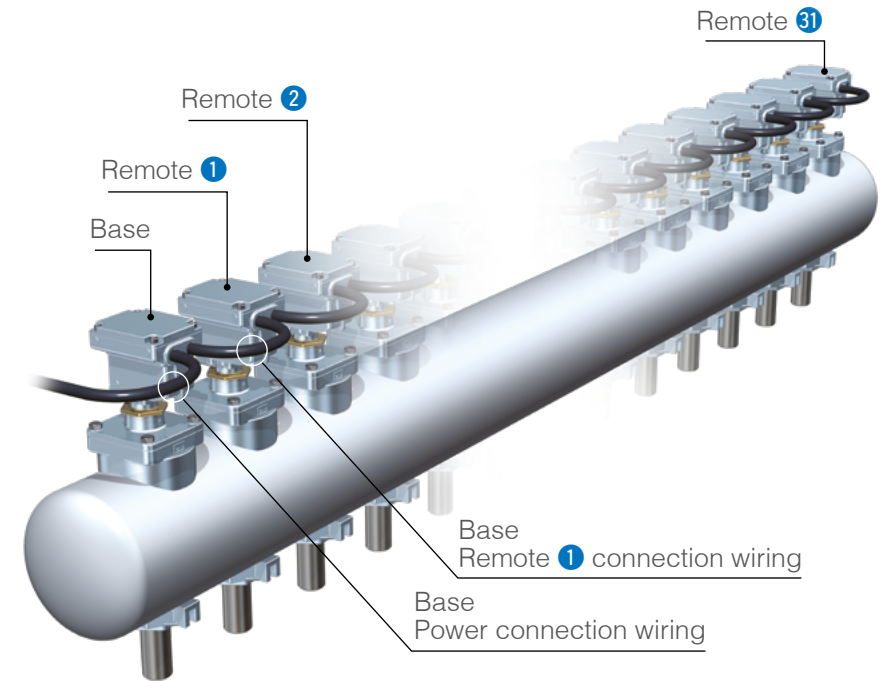


Pulse valve, JSXF-P Series



SMC solutions

- ✓ Autonomous dust extraction system for up to 32 valves
- ✓ Daisy-chaining reduces electrical wiring
- ✓ Quick and easy adjustment of pulse duration and intervals on the first base valve
- ✓ Optional direct connection of a differential pressure switch for autonomous signal processing and cleaning control
- ✓ SMARTVENT also available in all versions – immersion, compression fitting and direct piping



We've got the products you need for explosive atmospheres

Devices and protective systems for use in potentially explosive atmospheres must have been approved in accordance with Directive 2014/34 /EU, known as ATEX, since 1 July 2003.

To implement the ATEX Directive, SMC offers its customers a wide range of products such as air cylinders, positioners and process valves, which are certified as explosion-proof in various protection categories.



Cylinder, ATEX category 2 - II 2GDc
55-C96S(D) Series
⊕



Cylinder, ATEX category 2 - II 2GDc
55-CP96S(D) Series
⊕



Smart positioner, lever type, ATEX category 1 - II 1G
52-IP8001 Series
⊕



Smart positioner, rotary type, ATEX category 1 - II 1G
52-IP8101 Series
⊕



Pulse valve for dust collector, ATEX category 3
56-JSXF Series
⊕



Pulse valve for dust collector, ATEX category 2
55-JSXFA Series
⊕

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

7,900 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

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



Expertise – Passion – Automation

www.smc.eu
DUST-A-UK