Reduce costs – ensure quality: Optimise pneumatics using new materials

FESTO





Reducing costs while maintaining 100 % quality

New solutions for simple standard tasks

Reducing costs while maintaining 100% quality - an impossible task? Not with Festo! Discover new solutions for increasing the efficiency of your standard pneumatics without compromising on quality.

How does it work? We use a number of different methods to realise your savings potential:

- Alternative materials, such as high performance polymers
- Reduced portfolio complexity by concentrating on main functions and standardised processes
- New standards of efficiency achieving savings on material and installation costs using clever construction principles
- Added value due to improved system and logic concepts optimum performance levels with reduced total costs, due to servicing for all individual components

Reduced complexity:

- Standardisation of product series
- Focus on main functions

Alternative materials:

- Lightweight construction with high performance polymers
- Modern materials technology for optimisation of costs
- Energy efficiency

New construction principles:

- For optimum efficiency
- Milestones in standard pneumatics

Added value concepts:

- Ready-to-install system solutions
- Logistics optimisation service
- Quality control
- Software support

We can always provide the most suitable solution ...

... and you only have to pay for the functionality you really use!

Understanding the customers' needs and building up an excellent portfolio based on this understanding, that's one of our guiding principles. Another one is that our portfolio for standard ranges should benefit greatly from the results of our research into highly specialised solutions.

The benefit to you: you can present your customers with the exact solution they require, and save costs without reducing

In this brochure, you will find examples of attractively priced solutions for this top-down technology transfer that have been optimised for specific applications.

Maximum functionality for special tasks



Maximum safety included



electronics industry monitoring



Antistatic for the









Easy-to-clean



Stainless steel for "Clean Design" maximum resistance to media









Products designed for simple

standard tasks



Core functionalities Up to 10 bar of compressed air and max. 60 °C preparation



3/2 or 5/2-way functions and 400 l/min



For simple clamping work



For simple pneumatic auxiliary movements



New materials: Cost-efficient

Helmets, bicycles, automobile and aircraft components – all products which require the highest level of safety. It has been a long time since they were constructed solely from metal. And with good reason: technical polymers no longer have much in common with the plastics used in the past. Nowadays, their material properties are much more similar to those of metal.

Intensive endurance tests,
material fatigue tests and molecular structure investigations,
not to mention heavy use by
pilot customers, send out a clear
message: for many solutions
with pneumatics, innovative high
performance polymers are a
reliable alternative for dealing
with tasks more efficiently.

The studies conducted by our materials specialists speak for themselves. See the results for yourself by visiting

www.festo.com



Take advantage of new materials

The advantages at a glance

Ultra-lightweight construction

The advantages of an average weight reduction of 20%:

- Easier to install on movable machine parts
- Ideal for energy efficiency due to lightweight construction: lower moving mass means lower inertia and power consumption, especially during transportation

Simpler production process

This offers opportunities for potential savings, which in turn we pass on to you. Here are a few examples:

- Reworking such as deburring or removing chips is no longer necessary
- Injection moulding reduces the number of components, enabling a faster production process
- The high media resistance means no surface coating is necessary

Almost like aluminium

Overall, high performance polymer has very similar properties. Still not convinced? Take a look in our test laboratory:

www.festo.com

Characteristic	Die-cast AL	Die-cast zinc	High-tech polymer
Tensile strength [MPa] 20 °C, dry	220 – 240	280 – 300	280
Tensile strength [MPa] 80 °C, dry	190 – 200	40 – 50	170
Tension-E-module [MPa] 20 °C, dry	70000	85000	20000
Elasticity [%]	1	3	1,8
Pulsating tensile stress [MPa]	50	55	60
after 106 load reversals			
Density [g/cm³]	2,7	6,7	1,64
Resistance to media	Good	Average	Good



DSNUP ISO standard cylinder



Attractively priced – the new family of round cylinders to ISO 6432, with an aluminium barrel and polymer end caps. Available in sizes 16/20/25 with end caps for swivel mounting. The best choice for simple automation tasks such as deflector and flap control systems as well as simple clamping and holding functions.

Standardised

Dimensions according to ISO 6432 for fast, easy replacement. Particularly economical – in so

much as the same attachments from the comprehensive DSNU standardised range can be used.

Attractive pricing

The latest materials such as high performance polymers and state-of-the-art manufacturing methods guarantee the highest degree of quality and reliability at an extremely attractive price. The list price of the DSNUP is 30% less than the identically constructed all metal version DSNU. The standardised SM..-8 cylinder sensors can be fitted

over the entire stroke range using the SMBR mounting kit – as with the DSNU – thereby reducing ordering, logistics and assembly work.

Light and resistant

Its high chemical resistance and low weight make it versatile and highly suitable for many applications in the food & packaging, textiles, wood, plastics, machine tools, construction, climate control, agriculture and mobile technology sectors.

Technical data	
Standard diameter [mm]	16, 20, 25
Standard strokes [mm]	25, 50, 100
Force (advance) [N]	297
Force (return) [N]	249

90

Standardised

Inexpensive

Light and resistant

Standard cylinder ADNP



Greater economic efficiency in the compact class

Its compact design makes it perfect, even for small fitting spaces. Its minimal weight makes it ideal for mounting on movable machine parts.

Standardised

Dimensions in accordance with ISO 21287 for easy, fast replacement and multiple use of the same attachments.

Attractively priced

Optimum price-performance ratio thanks to new materials and technologies, e.g. the patented 3K piston.

Compact

Up to 50% less installation space compared with large standard cylinders to ISO 15552, and facilitates more space in your installation!

Easy to mount

Built-in QS push-in fittings and an extensive range of mounting accessories from the standard mounting range makes assembly quicker and easier!

Simple

Built-in push-in fittings are
15552, ideally matched to the cylinder
and thus simplify ordering,
logistics and mounting.

Technical data	
Standard diameter [mm]	20 50
Standard strokes [mm]	5 80
Force (advance) [N]	1178
Force (advance) [N]	1057





SMT-/SME-8M proximity switch



Attractively priced thanks to function optimisation

With the new modular system for SM...-8M proximity sensors, Festo has further enhanced harmonisation. This system is compatible with 48 different Festo drives.

Versatile

Fully compatible with all Festo drive units with T-slot and round tie-rod cylinders including the corresponding mounting kits.

Universal safety

Sturdy central fastening guarantees that switches are securely fitted in the slot – even for critical applications over longer periods. Graded cable qualities (standard, chain-link trunking, robot) facilitate maximum dependability and process reliability, up to control level.

Flexible

sensor.

Free choice of cable length means that connections are superfluous, even for chain link trunking and robot applications.

Systematically more efficient

Maximum flexibility in applica-

tion thanks to freely configur-

and connection technology.

able cable lengths, cable quality

Sensors are produced in-house,

guaranteeing system effective-

ness and product diversity. This

means the Festo range affords

heat-resistant, welding-splash-

proof, ATEX or 230 V cylinder

total satisfaction whether it be a

Technical data	
Operating voltage range [V AC/DC]	5 30
Rated operating current [mA]	100/500
Contact rating [W]	max. DC 3/10
Operating temperature range [°C]	-20 +70

Valve series VB One-way flow control valve VFOV with rotary knob



One-of-a-kind compactness – thanks to innovative technology

Constant height thanks to internal axial mechanism for adjusting the regulating screw. This makes the VFOV one-way flow control valve highly suitable for applications where space is restricted.

Always the first choice ...

... especially in tight corners.
The VFOV combines constant
height and the highest-precision
adjustability with an attractive
price – thanks to the reduced
complexity of the new construction principle.

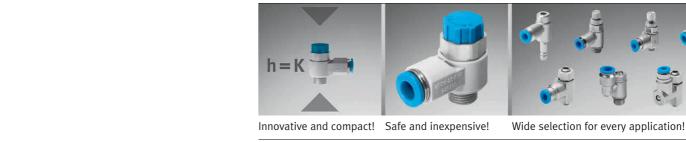
Reliable ...

... because it is no longer possible to make inadvertent adjustments during application. The optional protective cap guarantees that the flow rate stays the same once it's been set.

Tried and tested a million times ...

... the principle behind one-way flow control valves from Festo. This variant also guarantees easy and precise adjustment of piston speeds. The VFOV combines this with the renowned quality of QS fittings, which ensure reliable, leak-free tubing connections.

Technical data	
Flow rate [l/min]	0 2000
Connections	von M3 bis G ½
Flow rate qnN [l/min]	0 280



Insert and screw on It always fits A firm grip Innovative and compact! Safe and inexp



VB12 valve terminal



Flexible, universal, economical: the VB12 valve terminal

The robust and durable VB12 stands out in Festo's highperformance polymer portfolio with its unbeatable priceperformance ratio.

Ultra flexible

Whether as a modular product, a component or a multi-pin terminal, the VB12 offers enough scope to realise individual configurations. For a broad application area and more flexibility during planning, assembly and operation of universal and conventional applications.

Ultra light-weight

The polymer housing and the weight-optimised metal manifold rail guarantee a reduction in weight that's second to none when it comes to minimal space requirements.

Ultra economical

Quick and safe installation thanks to QS plug connectors. Available as completely assembled and inspected units. High quality, durability and reliability guarantee a long service life. Don't forget – you just need one bolt to fix the valve to the manifold rail.

Technical data	
Valve function	3/2-NC, 3/2-NO, 5/2 single solenoid, 5/2 impulse (2 valve positions)
Valve assembly	Poppet valve
Power supply	G 1/4
Flow rate [l/min]	400
Operating voltage [V DC]	24
Number of valve positions	2 35
Valve width [mm]	12



Valve series VB-20



Maximum economy: the performance-optimised VB 20 valve series

With a significantly more affordable list price compared to metal variants and more energy-efficient due to its lighter weight. Always provides the greatest flexibility and easiest handling, from individual valves to valve terminals.

Economical

Optimised performance and a wide range of flow rates from 200 to 1,000 l/min. Integrated QS plug connector for fast and safe installation. Available as components or completely assembled and tested units.

Simple handling

Quick and reliable mounting: just one screw is needed to connect the valve to the manifold rail. With integrated LED signal indicator on the multi-pin valve terminal. Very simple reconfiguration of cartridge plug connectors. Secure wall mounting or H-rail mounting.

Flexible

From an individual valve, a valve manifold with sturdy metal manifold rail or a multi-pin terminal to a modular system for individual configurations — anything is possible!

Reliable lightweight design

Thanks to the polymer housing and the weight-optimised metal manifold rail.

Technical data	
Valve function	3/2-NO, 3/2-NC, 4/2 single
	solenoid, 4/2 double solenoid
Design	Piston spool
Control type	Piloted
Actuation type	Electric
Flow rate per valve [l/min]	200, 500, 800, 1.000
Betriebsspannung	12 V DC/24 V AC, 24 V DC,
	110 V AC, 230 V AC
Power supply	G 1/4, G 1/2 valve manifold
	G 1/2 multi-pin terminal
Number of valve positions	2 to 12 valve manifold
	4 to 12 multi-pin terminal
Valve width [mm]	20





D series service units, polymer design



Attractively priced thanks to new materials technology: for example the new polycarbonate filter bowl.

Combinable

Functionalities of the service units can be upgraded whenever required, as the metal and polymer versions of the D-series are compatible.

High load bearing due to high-strength polycarbonate

Guarantees high impact strength, as demonstrated by its use for aeroplane components, safety glass and protective helmets.

Reduction in complexity through core functions

Regulators, filter regulators and filter regulator/lubricator combinations in 3 port sizes. For those who want attractively priced functionality to go hand-in-hand with proven quality.

Technical data	
Connection sizes [G]	1/8, 1/4
	(3/8 via connection plates)
Flow rate [l/min]	Max. 1300 l/min (pressure regulator)
Working pressure [bar]	Up to 7 bar
Filter stages [µm]	40/5
Ambient temperature [°C]	-5 +50



Protective conduit fitting combination PEN/QS-B



Materials technology for new cost-efficiency

Thanks to the new manufacturing method, the attractively priced PEN tubing behaves almost exactly as polyurethane tubing. This makes it ideal for use with the QS-B connector series.

Function-specific

Best suited to all standard applications with pressures of up to 10 bar and temperatures up to 60°C. It is also resistant to hydrolysis and most commonly used cleaners.

Clever solution

Our engineers have developed tubing which combines increased cost-efficiency with ease of installation. The polyethylene material makes the PEN significantly more affordable than polyurethane tubing, yet also has similar properties, such as narrow bending radii.

Pure cost-efficiency

Significantly more affordable! Firstly: polyethylene. Secondly: the QS-B fittings with 200 standardised fast sellers. And thirdly: the winning combination of PEN/QS-B!

Technical data	
Tubing O.DØ [mm]	4, 6, 8, 10, 12 und 16
Fitting types	176 variants
Operating pressure	
(Temperature dependent) [bar]	0,95 +10
Operating temperature [°C]	-30 +60 (PEN)
	0 +60 (QS-B)





Added value formula

The increases in efficiency along your value creation chain are the result of a holistic approach from Festo which goes far beyond individual components, encompassing not only solutions, targeted support and services, but also basic and further training. This added value formula unites 100% quality with costreducing factors.

Getting there quicker: Everything from one source

From components to complete systems, from deliveries in a package to ready-to-install solutions – with Festo, you get everything from a single source, whether you're looking for simple, cost-reducing solutions, standard tasks or special products for specific ranges of applications or for industry-specific solutions.

Consistently holistic for us also means that Festo applies the knowledge from the Festo Didactic basic and further training programmes to other fields and uses it as a basis for its consultancy services.

Increasing efficiency:

Services and support

Festo offers expert advice, helpful support and useful services along the entire value creation chain.

This enables you to tap the full potential of our product portfolio whilst still reducing costs, thus benefitting from the added value that comes with our range.

Engineering Procurement/ Assembly and Operation Logistics • Design help • 24-hour delivery service Modular service contracts · Commissioning axis systems Electronic catalogue Logistics optimisation service · Compressed air consumption Compressed air quality analysis PrePack analysis • Spare parts catalogue/repair

Added value in detail

Solutions? Expert suggestions!

Our sales engineers can visit you and advise you on how to develop the best solutions for every key area, such as performance, design, process reliability and cost.



Partnership? Right from the engineering stage!

Speed counts: simpler design means a faster time-to-market. That's why we provide you with free software tools for engineering, or CAD downloads in many native formats.



Order processing? Quick and easy!

And convenient and secure, too: if you order via our online shop, our order tracking system means you always know where your order is. Alternatively, you can use our E-commerce option with EdiFACT.



Logistics? Quick and reliable!

High-speed delivery – the fastest in Europe: You will normally receive your product 24 hours after placing the order.



On site? Anywhere in the world!

12,800 employees in 56 national companies in 176 countries are on hand to give you personal advice, whether via technical hotlines or customer service. Our logistics are structured in such a way that communication with you is always quick, easy and efficient.







Cost reduction

Time reduction

Process reliability

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