German Engineering

SATA® filter regulator systems 500 series

Clean compressed air for perfect finishes

SATA – Your experts for clean compressed and breathing air

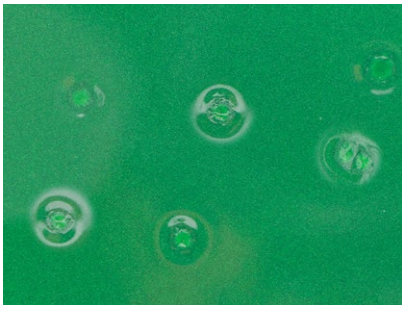
Compressed air is one of the main sources of energy in paint shops. After being generated in the compressor, the air is fed into the compressed air circuit, whereby impurities such as tiny particles of compressor oil can be carried along right into the spray gun or breathing air. While such impurities are not particularly relevant for many industrial applications, they will inevitably cause coating flaws or pose a health risk in the paint application process. When working with waterborne paint systems, even the tiniest quantities of oil vapors can cause coating flaws, and consequently time-consuming, costly rework. Oil vapors or particles may also enter the respiratory system and cause health issues.

The SATA filter series 500 is available either as a one-stage sintered filter with water and oil separator, as a two-stage combination filter with sintered and fine filter, or as a three-stage filter unit with additional sintered activated charcoal filter. Every six months, all filter stages are maintained together in a procedure that takes just a few minutes without the need for tools, thanks to the bayonet lock and defined position of the filter cartridges, which are replaced simply by inserting them. Furthermore, a flow-optimized cyclone separator minimizes pressure drop in the filter system and ensures a constant air flow of approximately 135 cfm.

Among others, SATA compressed air filters prevent the following coating flaws:

Dust particle inclusions

Condensation/corrosion



Silicone craters

SATA filter 500 series – Compressed air treatment system

A well functioning compressed air circuit also includes regularly maintained compressed air filter units. To warrant trouble-free operation, a filter unit should be fitted either immediately in front of or directly inside the spray booth. While the SATA filter 544 will be sufficient for solvent-based paints, the SATA filter 584 is required when applying waterborne paints, as the activated charcoal stage eliminates the critical oil vapors that can cause coating flaws with waterborne materials.

A three-stage SATA 584 filter unit is also needed when using a compressed air-fed respirator (without "belt-hung" activated charcoal filter) to purify the air for breathing.

Large pressure regulator for a precise setting of the required outlet pressure

SATA filter timer to monitor the filter cartridge exchange intervals of all filter stages

Air inlet G ½“ female thread; air flow: approx. 135 cfm at 87 psi In-line installation - Reverse air flow options available

Flow-optimized cyclone separator with high separation efficiency of particles > 5 µm

Air outlet with ball valves (¼" male thread) – (optional: SATA high flow quick couplings)

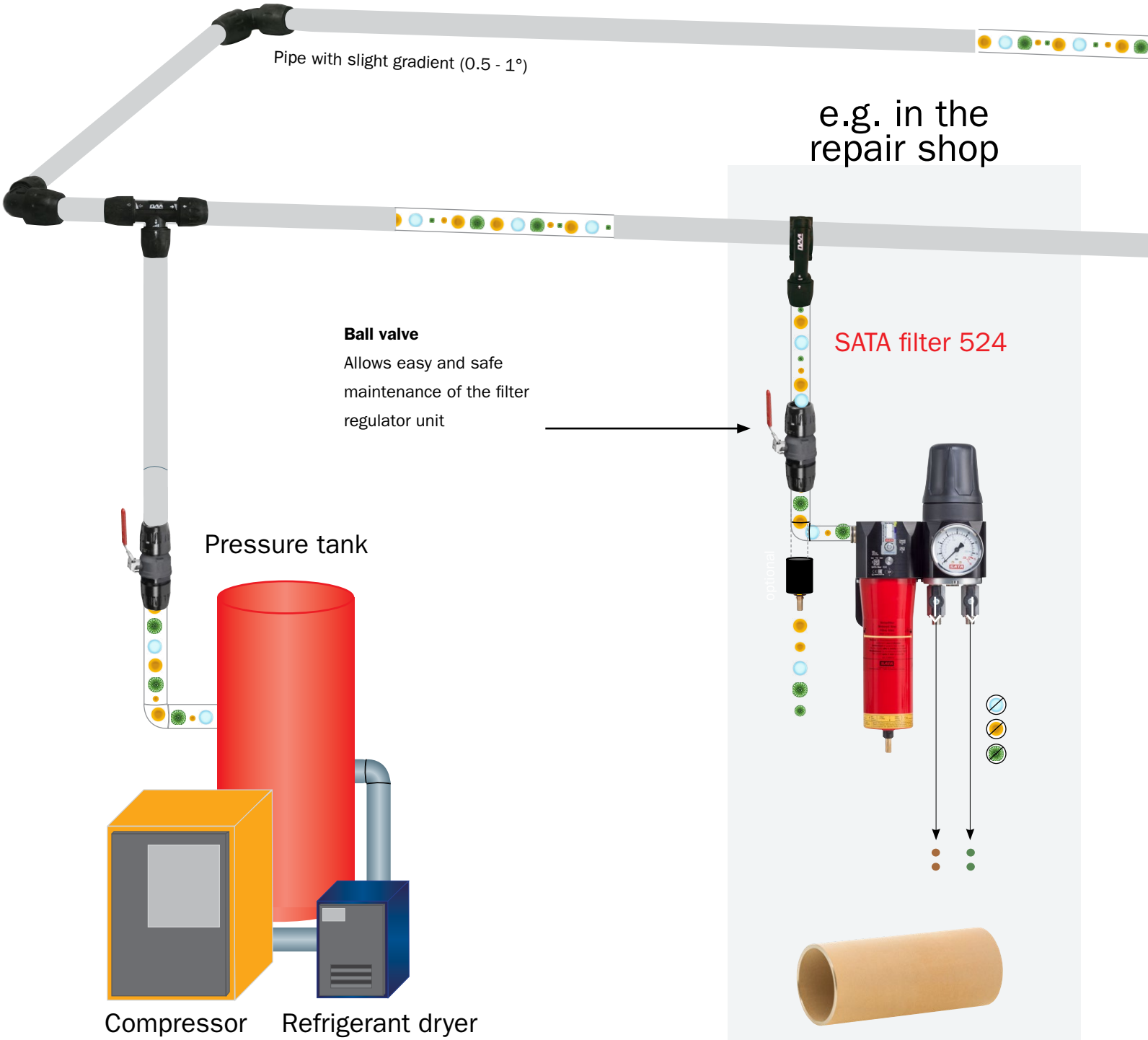
Automatic condensate discharge valve – high operating security, low service requirement

First filter stage: Sintered filter to separate particles > 5 µm; filter cleaning and exchange interval: every 6 months

Second filter stage: Fine filter cartridge to separate particles > 0.01 µm; separation efficiency 99.998 %; exchange interval: every 6 months

Third filter stage: Sintered activated charcoal cartridge with higher separation efficiency of oil vapors. Suitable for air-supplied breathing protection and for the application of waterborne paints; exchange interval: every 6 months

Technical layout of an air line circuit



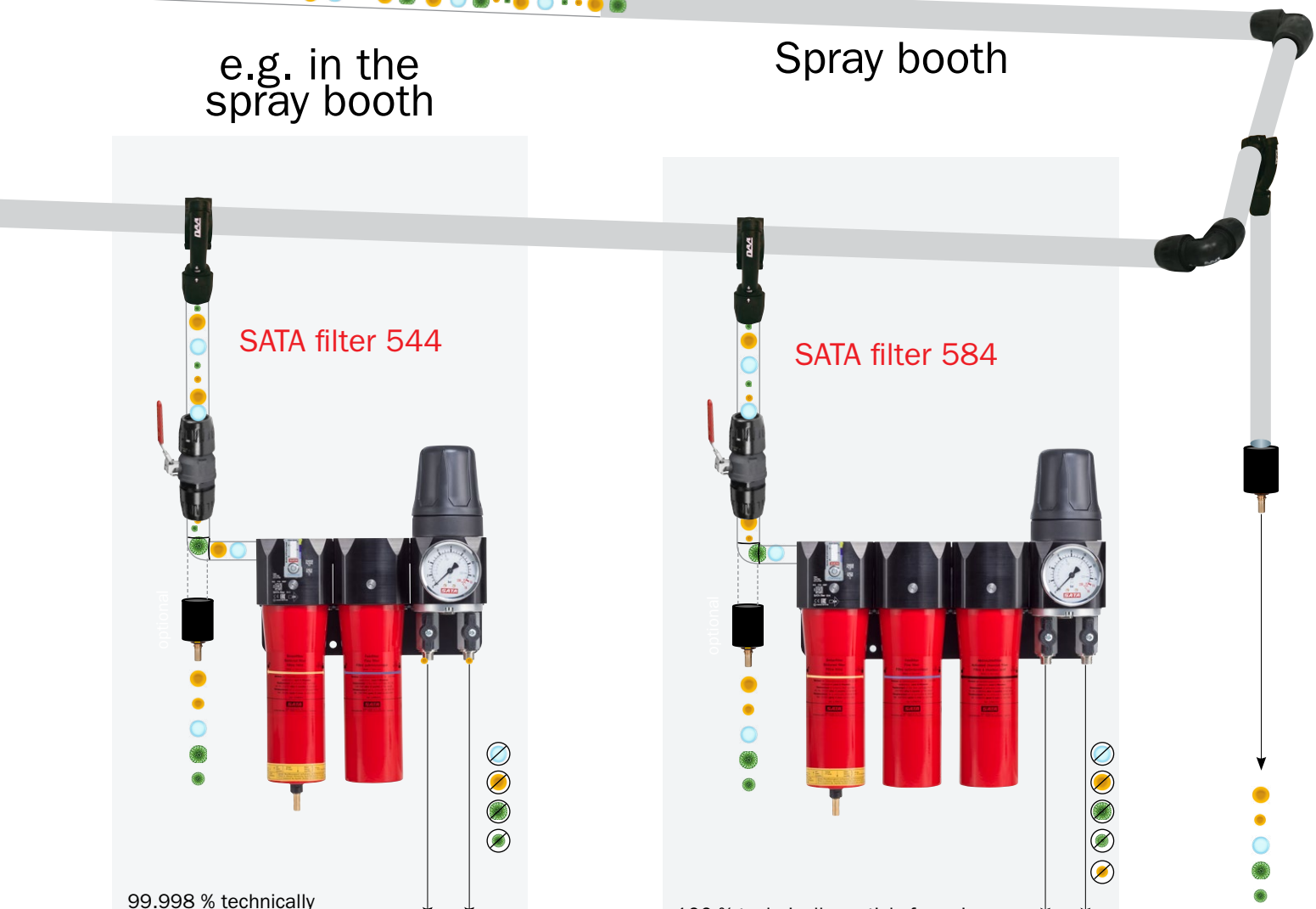
Compressed air generated by the compressor can be contaminated with various substances:

- Oil droplets
- Oil vapors
- Condensate / water vapor
- Particles > 5 µm
- Particles > 0.01 µm

First filter stage: Oil/water separator with sintered filter

- The sintered filter separates particles > 5 µm.
- Exchange interval: every 6 months.
- Not sufficient for spraying or for breathing

e.g. in the spray booth



SATA filter 544

99.998 % technically particle-free air

Additional second filter stage: fine filter

- The fine filter separates particles > 0.01 µm; Capacity of particle filtration: 99.998 %.
- Exchange interval: every 6 months.
- Compressed air not suitable for waterborne paints. However, in combination with the activated charcoal belt-unit provides quality breathing air.

Spray booth

SATA filter 584

100 % technically particle-free air

Additional third filter stage: activated charcoal filter

- Activated charcoal adsorbes oil vapors from the compressed air.
- Exchange interval: every 6 months. (Every 3 months with previous and competition models.)
- Compressed air also suitable for water-borne paints and breathing air

PRODUCT BENEFITS

- Higher adsorption of contaminations (compared to SATA filter 484) due to the new sintered activated charcoal filter
- Air flow with approx. 135 cfm
- SATA filter timer to monitor the exchange intervals of all filter cartridges
- Synchronized maintenance: Filter maintenance only necessary every 6 months for all stages
- Bayonet lock with haptic and acoustic feedback
- Fine filter and activated charcoal filter cartridges fit perfectly, simply insert – without screw fittings or additional seals
- CCS color coding of filter housing and filter cartridges for safe maintenance.
- Upgrade of a SATA filter 544 to a 584 possible through a simple connector system
- Maintenance-free sealing elements
- Reverse air-flow options available
- Flow-optimized cyclone separator with enhanced particle separation efficiency of particles > 5 µm

SATA® Pressure reducer 520™ with pressure gauge

Air flow at 87 psi: 135 cfm

Ambient temperature: 248 °F

Connection:
Air inlet: G 1/2" female thread
Air outlet: G 1/2" female thread

Part Number 1101667

SATA® filter 564® | Single-stage activated charcoal filter

for retrofitting SATA filter 544

Filter fineness:
Activated charcoal: adsorbes oil vapors from the compressed air

Air flow at 87 psi: 135 cfm

Ambient temperature: 140 °F

Connection:
Air inlet: G 1/2" female thread
Air outlet: G 1/2" female thread

For retrofitting SATA 544 filter to SATA 584 filter

Part Number 1101005

SATA® filter 524® | Single-stage sintered filter

Filter fineness:
Sintered filter: 5 µm

Air flow at 87 psi: 135 cfm

Ambient temperature: 248 °F

Connection:
Air inlet: G 1/2" female thread
Air outlets: 1/4" male thread

Recommended for:
Gun cleaning equipment | pre-filter in compressed air circuit

Part Number 1101659

SATA filter 500 – modular filter series for highest demands

The combination units SATA filter 544 and 584 are defining the standard in paint booths and breathing air treatment.

SATA® filter 584® | 3-stage combination filter

100% technically particle-free air

Filter fineness:
Sintered filter: 5 µm | Fine filter: 0.01 µm
Activated charcoal filter: oil vapors

Air flow at 87 psi: 135 cfm

Ambient temperature:
248 °F; with activated charcoal filter up to 140 °F

Connection:
Air inlet: G 1/2" female thread
Air outlets: 1/4" male thread

Recommended for:
solvent-based paints | waterborne | breathing protection equip.

Part Number 1099953

SATA® filter 584L® | 3-stage combination line-filter

100% technically particle-free air

Filter fineness:
Sintered filter: 5 µm | Fine filter: 0.01 µm
Activated charcoal filter: oil vapors

Air flow at 87 psi: 135 cfm

Ambient temperature:
248 °F; with activated charcoal filter up to 140 °F

Connection:
Air inlet: G 1/2" female thread
Air outlet: G 1/2" female thread

Recommended for:
solvent-based paints | waterborne | breathing protection equip.

Part Number 1101716

SATA® filter 544® | 2-stage combination filter

99.998% technically particle-free air

Filter fineness:
Sintered filter: 5 µm | Fine filter: 0.01 µm

Air flow at 87 psi: 135 cfm

Ambient temperature: 248 °F

Connection:
Air inlet: G 1/2" female thread
Air outlets: 1/4" male thread

Recommended for:
solvent-based paints | Breathing protection when also using charcoal belt unit

Part Number 1100990

SATA® filter 544L® | 2-stage combination line-filter

99.998% technically particle-free air

Filter fineness:
Sintered filter: 5 µm | Fine filter: 0.01 µm

Air flow at 87 psi: 135 cfm

Ambient temperature: 248 °F

Connection:
Air inlet: G 1/2" female thread
Air outlet: G 1/2" female thread

Recommended for: solvent-based paints | Breathing protection when also using charcoal belt unit

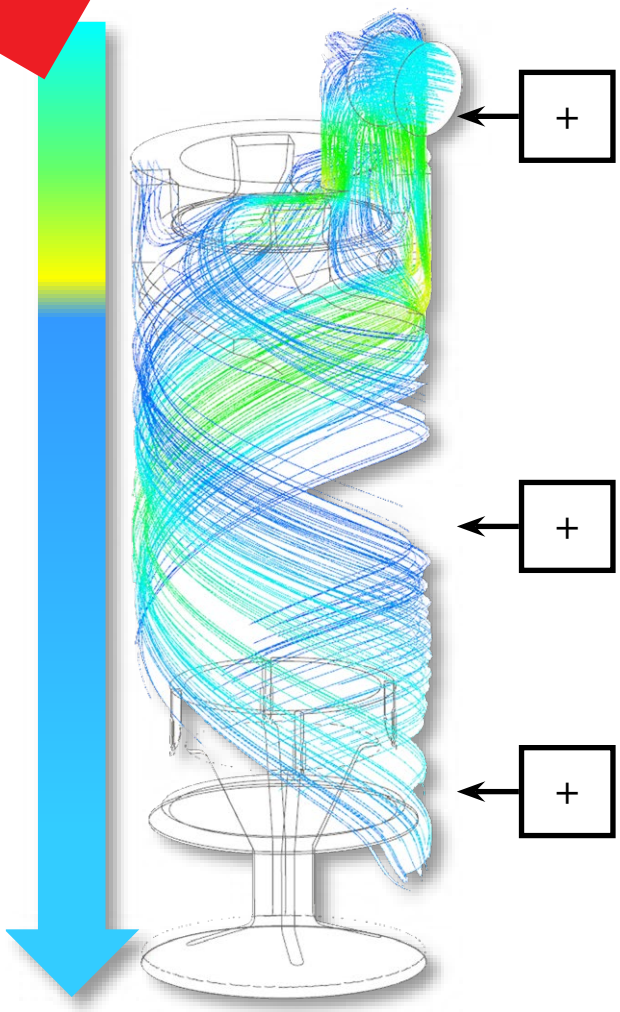
Part Number 1124932

Flow-optimized Cyclone separator

NEW

SATA FILTER 584

The flow-optimized cyclone separator (defined position), ensures a constant and uniform air flow as well as an uninterrupted air rotation over a longer distance, minimizes the pressure drop in the system resulting in a notably enhanced separation of particles.



Flow rate

Tips and recommendations

The **compressed air** generated by the compressor is the only energy that atomizes the paint material and transfers it to the object. The air **must not only be clean and dry, but also constantly available in adequate quantity**.

To fulfill these requirements, the following important aspects have to be taken into account:

- the total air consumption cfm
- the compressor performance
- the construction and the length of the air line loop system
- the inner diameter of main and stub lines

Recommended minimum diameter of the main line for the air line system

Required air consumption cfm	Minimum inner diameter of main line or circuit required based on a length of ...	
	up to 164 ft	up to 492 ft
18	3/4"	1"
35	1"	1 1/4"
53	1"	1 1/2"
73	1 1/4"	2"
106	1 1/2"	2"

Drop legs leading from the main air line to the point of use should be equipped with a minimum inner diameter of 1/2".

Example of an air consumption calculation in a body shop

Work scenario	Device	Number	Air consumption cfm	
			Individual	Total
Blow gun	SATA blow gun	2	5,3	10,6
Spray gun for polyester putty	SATAjet 100 B P	1	8,7	8,7
Primer gun	SATAjet 100 B F HVLP	1	12,4	12,4
Top coat gun	SATAjet X 5500 HVLP	2	15,2	30,4
Spot Repair gun	SATAminijet 4400 B HVLP	1	4,2	4,2
Dry-blowing gun	SATA dry jet	2	9,5	19,1
Air fed breathing protection equipment	SATA air vision 5000	2	10	20
Spray gun cleaning	SATA clean RCS	1	4,5	4,5
Sanding	Orbital sander	2	8,8	17,7
			Total air consumption:	127,6
			Performance efficiency approx. 33.33% ➡air consumption:	42,5
			Rest of approx. 30% ➡ minimum cfm required:	55,3

The compressed air line looped system is fitted between the compressor and spray gun, with components such as pre-filters, ball valves, valves, hoses and couplings etc. They can play a crucial role in obtaining uniform, perfect spraying results, which can be flawed if even only one of these components is faulty.

The following overview helps prevent coating flaws:

Malfunction	Possible cause	Corrective action
Insufficient air volume / pressure drop / coarse surface structure	Insufficient inlet pressure at the filter unit	Increase pressure (depending on the design and construction of the air-powered tools, it may have to be set even higher)
	Insufficient compressor performance	Calculate air consumption and increase the compressor power, if necessary
	Insufficient inner diameter of the air line system at one or several locations (e.g. due to a ball valve)	Check inner diameter of the air lines and hoses, and whether the filter elements are still sufficiently clean, otherwise replace. Use an air hose with a diameter of min. 9 mm, connection couplings and nipples with min 5.5 mm inner diameter
	Line installation instead of an air line looped system	Install an air line looped system, if possible
	Leakage in the air line circuit	Repair leakages
Coating flaws (e.g. silicone craters/ particles on painted surface)	Defective compressor causing contamination in the air line looped system, air hoses or filter units, resp.	Check if compressor works properly, repair or replace, if necessary; maintenance of filter units, replace air hoses
	Corrosion, e.g. at connection nipple, ball valve or coupling	Use corrosion-resistant connection nipples, clean components or replace, if necessary
	Contamination (e.g. green rust / corrosion) in compressed air line system due to non-suitable air line material (e.g. copper / steel / heat sensitive plastic materials)	Use the proper piping, DanAmAir aluminum or stainless steel to maintain clean air throughout the air line system

SATA Black Breathing Hose

Top quality breathing hose for breathing air and air tools.

Hose Assembly, 3/8 ID, 145 psi hose w/coupler & nipple. NIOSH approved

679010	Premium Breathing Hose 10'
679015	Premium Breathing Hose 15'
679020	Premium Breathing Hose 20'
679025	Premium Breathing Hose, 25'
679035	Premium Breathing Hose, 35'
679050	Premium Breathing Hose, 50'
679075	Premium Breathing Hose, 75'
679100	Premium Breathing Hose, 100'

Technical Data

Information	**SATA Black Breathing Hose**
Inner Diameter:	3/8"
Wall Thickness:	.177"
Working Pressure:	145 psi
Temperature:	-22°F to 212°F
Minimum Bending Radius:	2"
Weight:	.19 lbs/ft
Construction Tube:	EPDM - Black
Reinforcement:	Synthetic Cord
Cover:	EPDM - Black
Conformity Standards:	ATEX Classification: II 2 G T4
	DIN EN 14594 class 3B
	NIOSH Approved

Filter maintenance – ensuring premium air quality

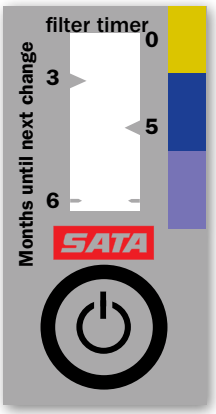
In order to preserve its efficiency, the filter unit must be regularly maintained, therefore avoiding coating flaws and other quality issues and eventually expensive rework.

SATA equips all filter units with a SATA filter timer to remind users to regularly change the filter cartridges.

Handling the SATA filter timer is easy:

1. When a new filter regulator unit is installed, the filter timer must be activated by pressing the button.
2. Once activated, the maintenance interval for the respective filters starts "running". The window gradually changes color to red during the course of the interval (6 months), corresponding approximately to the saturation progress made during normal use.
3. The filter cartridges must be replaced once the window changes color to red.
   Note: shorter filter change intervals may be necessary when there is a particularly high level of harmful substances in the compressed air

All spare filter cartridges are also fitted with the corresponding SATA filter timer which is inserted in the provided holder and activated every time after the filter has been maintained.



SATA filter timer with 6 month maintenance interval


1. Press to start the SATA filter timer


2. The display window will gradually turn to red, indicating the passing of time


3. Once the display window has completely changed to red, the filter needs to be replaced.

Available Videos of SATA filter 500 series on YouTube

Teaser	Functionality	Maintenance	Retrofit SATA filter 544 to SATA filter 584	Extension to 4 air outlets	Change air flow from right to left	Installation of SATA adam 2	In-depth Filter 500 by Dan-Am
SCAN ME	SCAN ME	SCAN ME	SCAN ME	SCAN ME	SCAN ME	SCAN ME	SCAN ME

Spare filters and accessories

SATA filter cartridges

First stage: sintered filter

- for SATA filter series 500, 400 and 200
- the sintered filter eliminates particles > 5 µm
- Exchange interval: every 6 months

Part Number 22160

Second stage: fine filter

- for SATA filter series 500
- the fine filter eliminates particles > 0.01 µm
- Exchange interval: every 6 months

Part Number 1097999

Third stage: activated charcoal filter

- for SATA filter series 500
- Activated charcoal separates oil vapors
- Exchange interval: every 6 months

Part Number 1098004

Service Kit for SATA 500 filter series

- with fine filter and activated charcoal cartridge

Part Number 1098054 - SAVE 8%

All SATA filter cartridges are supplied with a SATA filter timer

Dan-Am in-line regulators

Dan-Am in-line regulator

Precise control of air flow and pressure with a 160 psi gauge, 1/2”

Part Number 675635

Dan-Am in-line regulator w/bracket

Precise control of air flow and pressure with a 160 psi gauge, bracket, 1/2”

Part Number 675634

Dan-Am point of use regulator

with two or four drop manifold, mounting bracket
Max inlet pressure: 216 psi
Max. cfm: 140

Two drop manifold
Part Number 675652

Four drop manifold
Part Number 675654

SATA filter accessories

SATA filter cover

for all SATA filters series 500
Part Number 1101500
set of 4

Outlet fitting

for adding 2 ball valves for SATA filter series 500
Part Number 1101146

CO monitor/gauge manifold

for 500 Line filter
Part Number 1124940

SATA quick coupling

G 1/4" female thread
Part Number 13599

SATA High-Flow Coupling

for upgrading the outlet manifold
G 1/4" female thread, 2 pk
Part Number 1107269

SATA mini filter

Dust, oil and condensate are removed from the spraying air directly at the spray gun.
Part Number 9878

Air quality control

SATA® air tester

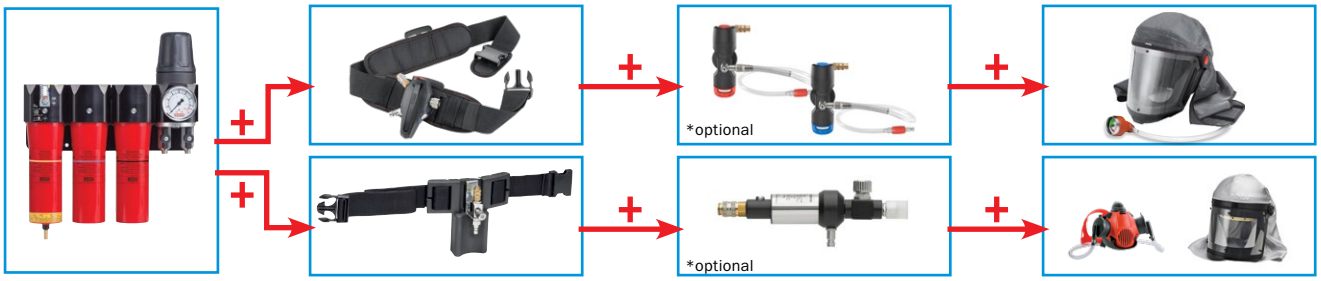
For a quick and safe check of the compressed air concerning substances causing coating flaws.
Part Number 156299

SATA® air check set

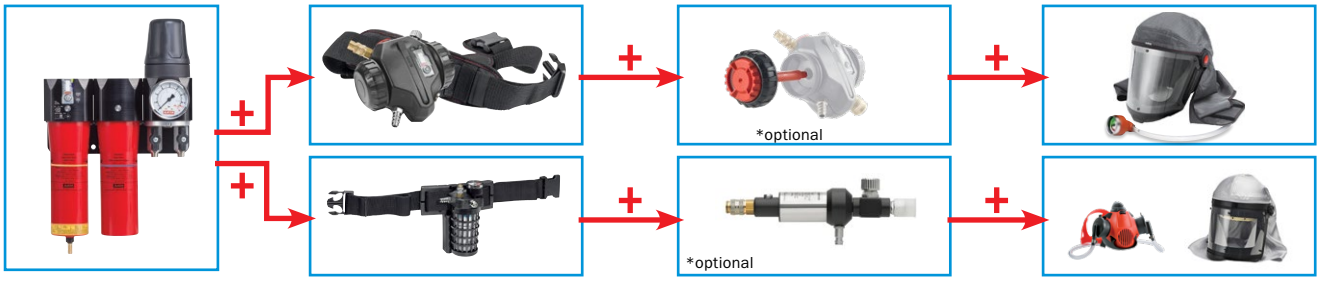
Compressed air testing device for perfect quality.
Part Number 7096

SATA breathing protection for optimum health protection

Whether hoods or half masks, breathing protection equipment by SATA offers convincing attributes such as maximum protection and long service lives, as well as being comfortable to wear. This means health protection and a high level of user acceptance.



Please remember to wear suitable protective clothing to protect hair and skin from harmful substances



*For more part numbers see catalog

SATA air vision 5000 air regulator set Part No. 1005603

1005596 SATA air vision 5000 hood only	
1000207 SATA air regulator only	
1000223 SATA air regulator belt only	

SATA air vision 5000 carbon regulator set Part No. 214718

1000182 SATA air carbon regulator only	
1000158 SATA air warmer carbon	
1007021 SATA air warmer	
1006990 SATA air cooler	

SATA vision 2000 Industrial belt valve Part No. 60707

51854 SATA vision 2000 hood only	
61002 SATA Industrial belt valve only	

SATA vision 2000 activated charcoal belt unit Part No. 36384

37200 SATA activated charcoal belt only

SATA air star C Industrial belt valve Part No. 137745

137653 SATA air star C half mask only	
138362 SATA Industrial belt valve for half mask only	

SATA air star C activated charcoal belt unit Part No. 137547

37192 SATA activated charcoal belt for half mask only

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