SATA® filter 400 & 200 series

German Engineering

Spray Guns | Cup Systems | Breathing Protection | Air Filtration | Accessories

Clean air for perfect results

SATA – Ensuring clean atomisation and breathing air

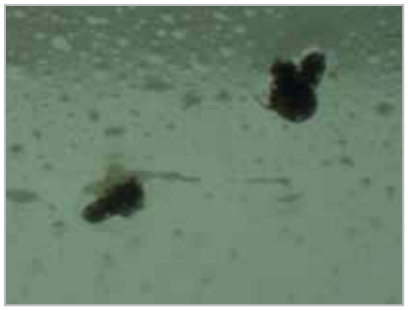
Every bodyshop requires compressed air for many different applications, such as for painting, operation of paint pressure tanks, material pumps, blow guns, cleaning devices and/or supplied-air respirator systems. According to the field of application, there are different requirements concerning air purification: In all cases, SATA offer the appropriate solution.

Poor material adherence, nibs and other coating flaws lead to time-consuming and expensive rework. Most coating flaws are the result of poor air quality which can be prevented with the installation of SATA filter regulator units.

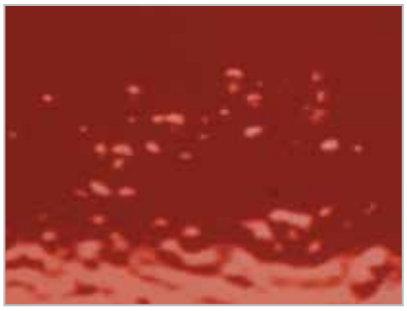
SATA filter 200 series.

SATA filter regulator systems help prevent the following coating flaws:

Dust particle inclusions



Condensate



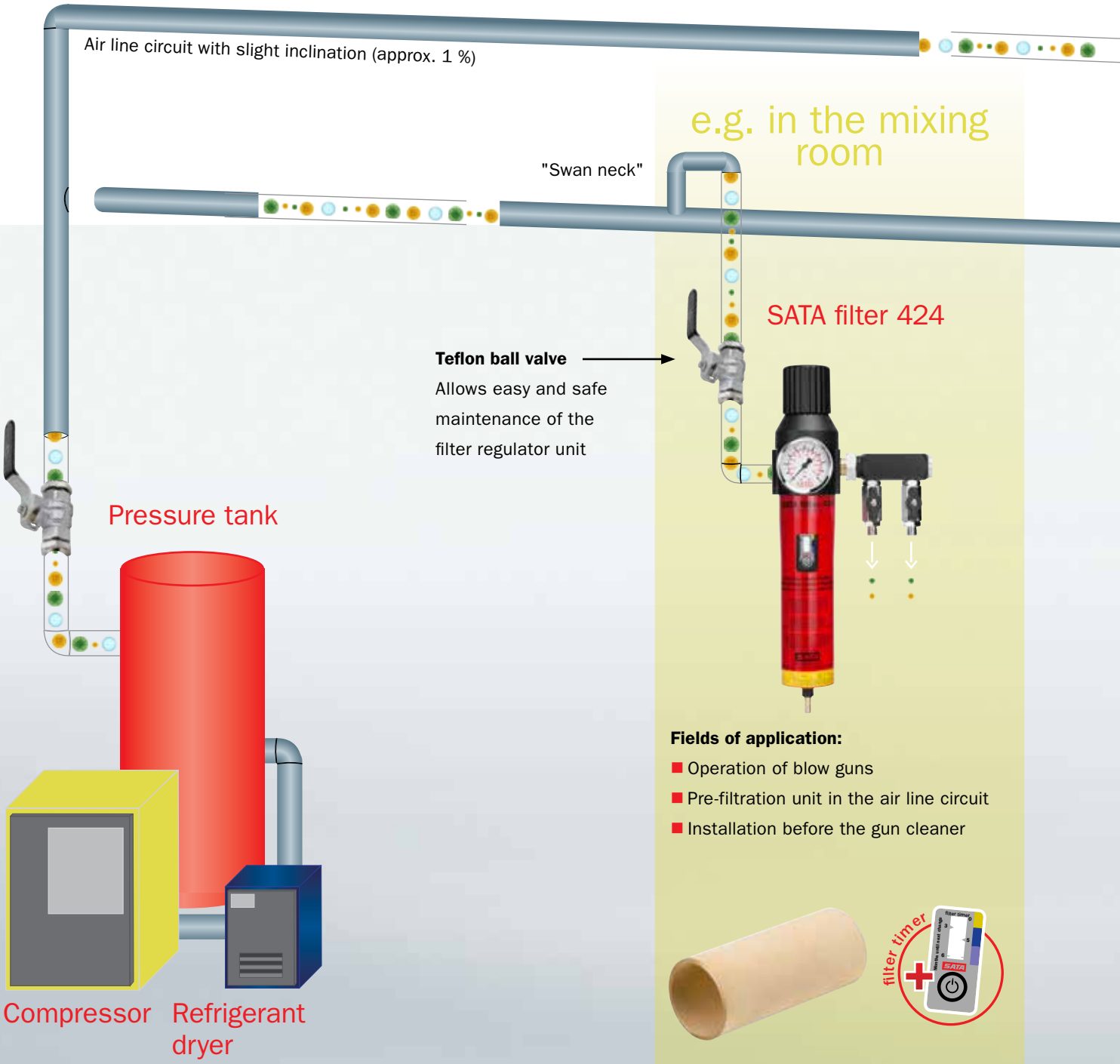
Silicone craters

Optimum personal breathing protection with clean compressed air supplied by e.g. the SATA filter 484 with activated charcoal filter stage.

SATA filter 400 series.

For more information on:

Technical layout of an air line circuit



Fields of application:

- Operation of blow guns
- Pre-filtration unit in the air line circuit
- Installation before the gun cleaner

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

- Oil droplets
- Oil vapours
- Condensate / water vapour
- Particles > 5 µm
- Particles > 0.01 µm

First filter stage: Oil/water separator with sintered filter

- The air is accelerated inside the cyclone separator ensuring that oil droplets and condensate are collected on the wall of the filter canister.
- 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

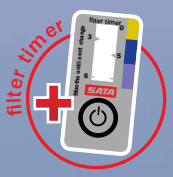
optonal: SATA filter 244

SATA filter 444

99.998 % technically particle-free air

Fields of application:

- Application of solvent-based paint systems
- Air supply to breathing protection equipment with activated charcoal adsorber on the belt unit



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.
- **Not** sufficient for spraying waterborne paint or for breathing

Spray booth

optional: SATA filter 284

SATA filter 484

100 % technically particle-free air

Fields of application:

- Application of waterborne and solvent-based paint systems
- Air supply to breathing protection equipment without activated charcoal adsorber

Additional third filter stage: activated charcoal filter

- Activated charcoal adsorbes oil vapours from the compressed air.
- Exchange interval: every 3 months.
- Suitable for spraying also waterborne paint and for breathing

SATA filter 200 series

Economical combi fine filter unit for highest air quality requirements in paint application as well as for air-supplied breathing systems. For installation in spray booths, prep decks and other workshop areas.

Product Benefits

- Excellent compressed air quality – removes oil, water and particles
- User-friendly and easy to maintain
- Activated charcoal cartridge (third filter stage) removes oil vapours and odours from the breathing air
- 70.6 cfm air flow – sufficient air volume to supply two spray guns simultaneously with sprayable and breathable clean air
- Air inlet G ½" female thread; air outlet G ¼" female thread
- Includes SATA filter timers to monitor the filter cartridge exchange intervals

SATA® filter 284 | triple-stage combi filter

100 % technically particle-free air

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

Air flow: 70.6 cfm at 90 psi

Ambient temperature:
120 °C; with activated charcoal filter up to 60 °C

Connection:
Air inlet: G 1/2" female thread
air outlet: G 1/4" female thread

Art. No. 141218

SATA® filter 244 | double-stage combi filter

99.998 % technically particle-free air

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

Air flow: 70.6 cfm at 90 psi

Ambient temperature: 120 °C

Connection:
Air inlet: G 1/2" female thread
air outlet: G 1/4" female thread

Art. No. 44404

SATA® filter 264 | ingle-stage activated charcoal filter

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

Air flow: 70.6 cfm at 90 psi

Ambient temperature: 60 °C

Connection:
Air inlet: G 1/2" female thread
air outlet: G 1/4" female thread

Art. No. 141226

SATA filter 400 series – Professional air filtration

Maintaining the air line circuit properly also requires regular service of the filter units. To ensure a secure work flow at all times, a filter unit has to be installed either directly in front of or inside the spray booth. The **SATA filter 444** is recommended with **solvent-based paint.** For **waterborne paints**, a **SATA filter 484** is essential to remove harmful oil vapours by means of the activated charcoal filter stage.

Product Benefits

- Prevents expensive coating flaws reliably
- User-friendly and easy to maintain
- Quick and easy installation
- Economical and efficient
- Extremely high air flow (approx. 127.1 cfm at 90 psi)
- Robust, durable filter canisters
- Includes SATA filter timers to monitor the filter cartridge exchange intervals
- Suitability of the triple-stage filter (SATA filter 484) for applying waterborne paints and for breathing air

PRACTICE TIP

1. SATA filter 444 and 484 can be also installed outside of the spray booth. The spraying pressure should then be regulated inside the booth (ideally using a SATA pressure reducer 420) .
   Advantage: If needed, two spray booths can be simultaneously supplied with perfectly clean spraying air, eliminating additional cost related to the maintenance of a second filter unit.
2. According to the practical requirements, the SATA filter 400 series can be installed with the air inlet either located on the left (ex-factory) or on the right. In the latter case, the pressure gauges have to be switched from the front to the back, while the ball valves have to be disassembled, turned by 180° and reassembled.

The safest way to achieve clean air is the use of a triple-stage filter with integrated regulator for presetting the atomisation air pressure

SATA® pressure reducer 420™ with pressure gauge

Air flow: 127.1 cfm at 90 psi

Ambient temperature:
120 °C

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

Art. No. 92288

SATA filter 400 – modular filter series meeting highest requirements

The SATA filter 400 series fulfills highest requirements in terms of quality and efficiency. Its modular construction allows to easily adapt it to suit different application needs. The combi units SATA filter 444 and 484 are setting standards – including the preparation of breathing air. They reliably prevent expensive rework.

SATA® filter 484® | triple-stage combi filter

100 % technically particle-free air

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

Air flow: 127.1 cfm at 90 psi

Ambient temperature:
120 °C; with activated charcoal filter up to 60 °C

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

Art. No. 92320

SATA® filter 444® | double-stage combi filter

99.998 % technically particle-free air

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

Air flow at: 127.1 cfm at 90 psi

Ambient temperature: 120 °C

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

Art. No. 92296

SATA® filter 424® | single-stage sintered filter

Filter fineness:
Sintered filter: 5 µm

Air flow at: 127.1 cfm at 90 psi

Ambient temperature: 120 °C

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

Art. No. 92221

SATA® filter 464® | single-stage activated charcoal filter

to upgrade the SATA filter 444

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

Air flow: 127.1 cfm at 90 psi

Ambient temperature:
60 °C

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

Art. No. 92247

Filter cartridges and accessories

Large pressure adjustment screw for precise setting of work pressure

Maintenance-free pressure regulation valve

Air inlet
Air flow: 127.1 cfm at 90 psi

First filter stage:
- Low-maintenance cyclone separates condensate and oil droplets
- Sintered filter to separate particles > 5 µm; filter exchange/cleaning: every 6 months

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

Condensate discharge hose

Compressed air pressure gauge for differential pressure display (control of fine filter saturation level)

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

Air outlet module

Optional air outlet

Air outlets with ball valves and connection threads

Filter canisters with easy to clean surface

Third filter stage:
Activated charcoal to separate oil vapours when using breathing protection equipment and for the application of waterborne paints;
Exchange interval: approx. every 3 months

First stage: sintered filter
- The sintered filter separates particles > 5 µm
- Exchange interval: every 6 months

Second stage: fine filter
- The fine filter separates particles > 0.01 µm
- Exchange interval: every 6 months

Third stage: activated charcoal filter
- Activated charcoal separates oil vapours
- Exhange interval: every 3 months

Filter maintenance – ensuring premium air quality

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

To remind the user to exchange the filter cartridges on a regular basis, every filter unit is now equipped with the new SATA filter timer.

Using the SATA filter timer is extremely easy: When a new filter regulator unit is installed, each filter timer must be activated by pressing the button to "start" the servicing interval of the respective filter stage. Over time, the display window will gradually turn to red, indicating the passing of time and serving as a guide to the measure of filter saturation with normal use. Whenever a window has completely changed to red, the concerned filter cartridge needs to be replaced. In line with the two different recommended replacement intervals of approx. three (activated charcoal) or six months (fine and sintered filter) respectively, there will be two filter timer versions available.

Additionally, the exchange filter cartridges will be also supplied with SATA filter timers which have to be inserted in the self-adhesive cages on the filter canisters and activated once maintenance is completed.

1. Release of 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.

SATA filter timer with 3 months (left) or 6 months (right) run-time, resp.

Filter cartridges and accessories

SATA filter cartridges

■ **Sintered filter (first stage)**
for SATA filter series 200, 300 and 400
Art. No. 22160

■ **Fine filter cartridge (second stage)**
for SATA filter series 200, 300 and 400
Art. No. 81810

■ **Carbon cartridge (third stage)**
for SATA filter series 200, 300 and 400
Art. No. 85373

Air quality control

■ **SATA® air tester**
For a quick and safe check of the compressed air concerning substances causing coating flaws.
Art. No. 156299

■ **SATA® air check set**
Compressed air testing device for perfect quality.
Art. No. 7096

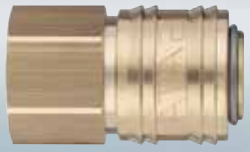
■ **Service kit**
Storage box for wall mounting with fine filter cartridge (1x) and carbon cartridge (1x) for filter series 200, 300 and 400
Art. No. 138933

Carbon Monoxide Monitor

■ **X767-PLUS**
110 volt AC Carbon Monoxide Monitor.
Alarm set at 10 ppm with an LCD display
Meets 29 CFR 1910.134 requirements for CO monitoring of compressed breathing air.
Audible and visual alarms for high CO or sensor failure.
RFI filtered from interference of cell phones, two-way radios, etc.
LCD digital readout in 1 ppm increments with response time of 10 seconds to 95%
Proven reliable performance electrochemical sensor.
Calibration recommended every 6 months.
Remote alarm options available
Requires Art. No. 158824 Manifold for extension with 2 ball valves for SATA filter series 400

SATA filter accessories

Manifold
for extension with two ball valves for SATA filter series 400
Art. No. 158824



SATA quick coupling
G 1/4" female thread
Art. No. 13599

SATA quick coupling nipple
G 1/4" female thread
Art. No. 6981 (5x)
(see Practice Tip below)

Teflon ball valve
1/2" male thread
Art. No. 10934
(see Practice Tip below)

SATA mini filter
Dust, oil and condensate are removed from the spraying air directly at the spray gun.
Art. No. 9878

SATA filter cover
for all SATA filter series
Art. No. 215053
(packing unit 4 pieces)

PRACTICE TIP

SATA teflon ball valves are equipped with an inner diameter of 1/2" to ensure high air flow.

SATA quick coupling nipples are corrosion-resistant. They are equipped with a teflon seal and dispose of a large inner diameter to avoid pressure drop.

Tips and recommendations

Compressed air supplied by the compressor is the (only) energy used to atomise and to apply paint material. The air must be not only be **clean** and **dry**, but also **constantly** and **sufficiently** available. 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 circuit
- the inner diameter of main and stub lines

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

Required air consumption cfm	Minimum inner diameter of main line or circuit required based on a length of ...	
	up to 50 m	up to 150 m
1.7	3/4"	1"
35.3	1"	1 1/4"
53.0	1"	1 1/2"
70.6	1 1/4"	2"
106.0	1 1/2"	2"

Stub lines leading from the main line to the respective supply point should be equipped with a minimum inner diameter of 1/2".

Example of an air consumption calculation in a bodyshop

Operation purpose	Device	Number of used devices	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 spray gun	SATAjet 100 B F HVLP	1	12.4	12.4
Top coat spray gun	SATAjet 5000 B 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
Supplied-air breathing protection	SATA air vision 5000 (vision 2000)	2	5.3 (6.3)	10.6 (12.6)
Spray gun cleaning	SATA multi clean 2	1	3.2	3.2
Sanding	Eccentric sander	2	8.8	17.7
			Total air consumption:	116.7
			Performance efficiency approx. 33.33 % air consumption:	38.8
			Rest of approx. 30 % required compressor power (minimum):	50.5

The interactive air consumption calculation tool available at www.sata.com/EN/aircalculation (see QR-Code below) allows to determine the required compressor performance to ensure proper function of all air-powered tools and devices.

www.sata.com/EN/aircalculation

The air line circuit is the link between compressor and spray gun featuring various components such as pre-filtration units, ball valves, valves, hoses, couplings, etc. These components are essential to achive perfect finishes on a consistent basis. Already one defective or non-performing component could cause expensive coating flaws.

The following overview helps prevent coating flaws:

Malfunction	Possible cause	Corrective action
Insufficient air volume / pressure drop / coarse surface structure	Insufficent inlet pressure at the filter unit	Increase inlet pressure to 60 - 90 psi (depending on the design and construction of the air-powered tools, it may have to be set even higher)
	Insuffcient compressor performance	Calculate air consumption and increase the compressor power, if necessary
	Insufficent inner diameter of the air line circuit 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 a closed air line circuit	Install an air line circuit, 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 circuit, 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 circuit due to non-suitable air line material (e.g. copper / steel / heat sensitive plastic materials)	Only use plastic materials or metals (ideally stainless steel) which are suitable for air line systems
	Missing swan necks, no or defective condensate discharge valve at the lowest point of the air line circuit, no inclination of the main line, troughs	Use swan necks at supply points; install condensate discharge valve at lowest point of main line, avoid troughs

The air hose is the flexible extension of the air line. It has to meet the following requirements:

- Minimum 9 mm inner diameter
- Flexible, silicone-free, antistatic

Recommendation: High flow coupling for easy connection and disconnection

Technical data air hose	
Operating temperature	-40 °C to +100 °C
Minimum burst pressure	870 psi
Permanent operating pressure	290 psi
Weight	approx. 210 g/m
Dimensions	Ø 9,5 x Ø 16,5 mm
Antistatic	R < 1MΩ
Norms	EN ISO 2398, A4/DIN EN 1953

SATA breathing protection for optimum health protection

SATA breathing protection equipment - whether it be full face respirator or half mask - provides maximum protection, enhanced lifetime and increased wearer comfort to preserve your health without restricting your mobility, thus ensuring perfect results.

SATA air vision 5000

SATA air vision 5000 hood Art. No. 1005596	
SATA air regulator belt Art. No. 1000223	
SATA air regulator Art. No. 1000207	
SATA air carbon regulator Art. No. 1000182	
Activated charcoal filter (accessories) for SATA air carbon regulator Art. No. 218206	
SATA air warmer carbon Art. No. 1000158	
SATA air humidifier Art. No. 1000314	
SATA air warmer Art. No. 1007021	
SATA air cooler Art. No. 1006990	

SATA air star C

- Supply of clean breathing air independent from the ambient air – also outside the spray booth
- High breathing air quality due to air supply independent of the ambient air, no inhalation resistance, no accumulation of heat and humidity inside the mask

Art. No. 137547

SATA air star F

- Breathing protection mask which is independent from the ambient air with exchange filter
- Easy handling and safe seat
- Relatively low inhalation resistance

Art. No. 137745

For more information concerning breathing protection, please contact your SATA dealer.

Your SATA dealer

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