

# Practical Guide: Spray Gun Maintenance



German Engineering

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



## Optimum cleaning and maintenance

# Methods of professional spray gun cleaning

**Spray gun cleaning and maintenance** are an essential part of the paint application process. Professional cleaning on a regular basis prevents coating flaws resulting from contaminated nozzle components to ensure perfect results at all times, **and it helps extend the lifetime of the spray gun**. In the following, various methods of spray gun maintenance are illustrated.

## Cleaning **between** the coating processes

- Less efforts with colour changes: The use of SATA RPS disposable cups does not require cleaning the cups. Only the material passages and the air caps of the spray gun have to be cleaned.
- Flexible: The SATA clean RCS cleaning device can be installed inside or outside the spray booth.
- Saves time: During the intermediate cleaning, the spray gun remains connected to the air line. Work interruption is reduced to a minimum. Intermediate cleaning of the spray gun and a complete colour change, respectively, can be conducted within 20–30 sec.





## Cleaning at the end of the working day

- Particularly efficient: At the end of a working day or in case of massive contamination, we recommend self-contained spray gun washing machines, such as the SATA multi clean 2.
- The cleaning cycle takes three minutes; saving the painter time for other jobs.
- Advantage of self-contained gun cleaning machines: Integrated dry-blow devices protect the air passages of the spray gun from contamination during the cleaning process.
- Extra care: The cleaning brush, which is constantly rinsed with cleaning agent, allows to give the spray gun its final brush-up.
- **Important:** After each cleaning process, the spray gun, the inside of the air cap as well as the part of the spray gun body where the air distribution insert is located must be thoroughly rinsed with clean cleaning agent and be thoroughly dry-blown afterwards – e.g. with a SATA blow gun.

## CLEANING AGENT

The selection of the appropriate cleaning agent depends on the applied material.

- **For waterborne materials**, please use **ph-neutral cleaning solutions** only.
- When using **solvent-based** material, please make sure to use **solvent-based cleaning agents or fresh cleaning thinners** only. Please also ensure **not** to use acetone-based cleaning agents (corrosion on spray gun).
- For perfect finishes and a long lifetime of your spray gun, we recommend a cleaning cycle of approx. 30 sec. (SATA clean RCS).
- **Please note: Please make sure to add clean thinner regularly if you use distillation systems, as the regenerated liquids could otherwise become too aggressive causing surface damage.**
- In general: Please strictly observe the manufacturer's dosage instructions and product specifications!

# Intermediate Cleaning

with SATA clean RCS



SATA clean RCS is available in three versions. It operates with compressed air for intermediate spray gun cleaning of the spray gun. It optimises the painting process and thus increases the profitability of the bodyshop. The installation of SATA clean RCS in the spray booth allows one or more successive colour changes with extremely short cleaning intervals by avoiding unnecessary additional trips in and out of the booth.



## 1. Cleaning of material passage and air cap

The spray gun stays connected to the compressed air supply; the multifunction switch automatically reduces air pressure during cleaning mode, thus avoiding overspray. Now paint channel cleaning takes place. Use brush to remove paint remainders from air cap and gun body.



## 2. Dry-blowing of spray gun

The dry-blowing station removes cleaning agent residues from the spray gun. Therefore, please ensure sufficient drying.



## 3. Make the colour change, if necessary

The complete colour change takes place within approx. 20 – 30 seconds. Advice: The RCS unit offers excellent space for holding RPS cups containing the prepared colour shades to follow. It is not necessary to leave the booth in order to effect colour change.

# Cleaning

in self-contained cleaning machines such as SATA multi-clean 2



Self-contained washing machines require a **correct position** of the spray gun in the washing chamber (see below). Cleaning agent may never penetrate the air passages of the spray gun as material deposits may affect the spray gun function: Make sure that the spray gun is always blow-dried after the cleaning process.

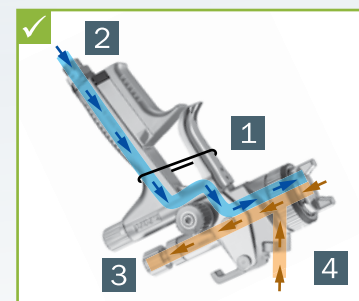
## Possible consequences of non-compliance:

- Residues and corrosion in the air passages
- Faulty spray pattern
- Faulty pressure measuring ► incorrect pressure is displayed ► colour shade deviation
- Paint contamination
- Digital pressure display turns black or fails

## IMPORTANT ADVICE

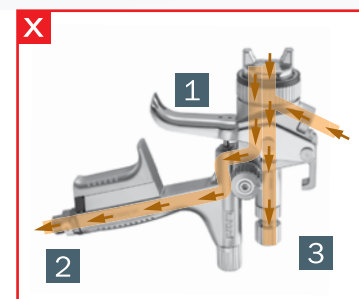
Correct handling, correct position in the cleaning device

1. Lock the trigger
2. Connect blow air
3. Fully open air micrometer – air must be able to exhaust at nozzle head
4. **Correct position:** Gun suspension hook must be located in the lowest position



Incorrect handling

1. Gun trigger not fixed
2. No blow air connection
3. Wrong gun position ► **Cleaning agent enters into air passages, thus contaminating and blocking them, as the case may be with lasting effect**



blue = air  
orange = cleaning agent

# Manual cleaning of spray guns

## Disassembly of nozzle set



1 Removing the paint needle



2 Remove air cap



3 Unscrewing the fluid tip with the ring spanner integrated in the universal spanner.

## Cleaning of the nozzle set



Cleaning kit, Art. No. 64030



Cleaning kit, Art. No. 64030



## Cleaning and drying



6 Clean the material passage



Clean the spray gun body



Dry with blow gun

## Assembly of the nozzle set



Assembly of the fluid tip



**Hand-tighten** fluid tip with universal spanner



Assembly of the air cap



Lubricate\* paint needle around the needle packing area



Assembly of the paint needle



Lubricate\* and insert paint needle spring



Lubricate\* thread of material flow control screw



Install material flow control screw








Lubricate visible area of air piston rod

When cleaning the spray gun manually, please make sure that the applied brushes are free of any metal wires which may damage the spray gun. Ideally, please use specially designed SATA cleaning brushes and SATA nozzle cleaning needles to ensure optimum cleaning and maintenance of the nozzle set.

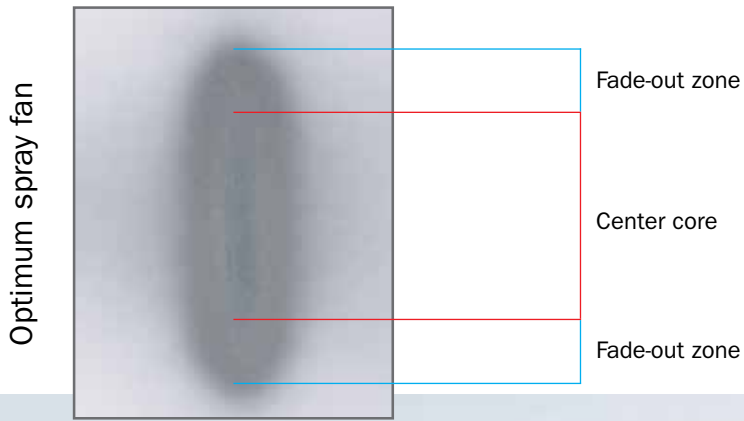
Furthermore, please make sure that no cleaning fluid ends up in the air passages of the spray gun body.

# Avoidance & Elimination of Defects

Dirt or damage, especially on nozzle set components, can provoke faulty spray patterns. In most cases, however, dirt can be removed easily.

| Defect  | Possible cause   | Corrective action  |
|---|--|--|
| Spray pattern is not large enough<br> | Air drillings and air passages are clogged                                 | Clean the air cap with cleaning solution using a suitable cleaning brush; afterwards blow dry thoroughly |
| Angular or S-shaped spray fan<br>    | Horn air drillings are clogged   | Thoroughly clean the air cap with suitable cleaning utensils; replace the nozzle set, if necessary       |
| Half-moon shaped spray fan<br>       | Horn drillings are contaminated on one side or front drillings are clogged | Clean the air cap with cleaning solution using a suitable cleaning brush; afterwards blow dry thoroughly |
| Lopsided spray fan<br>               | Pin of the fluid tip and/or air cap horns damaged                          | Make sure that fluid tip and air cap are undamaged; replace nozzle set, if required                      |
| Splitting spray fan<br>              | The atomisation pressure is too high                                       | Adjust the inlet pressure in line with the requirements of the paint material being used                 |
|   | The material viscosity is too low  | Properly adjust viscosity; use smaller nozzle size, if necessary   |





| Defect  | Possible cause   | Corrective action  |
|---|--|--|
| Corrosion on the air cap thread, inside material passages (cup connection) or on spray gun body | Cleaning solution (water-based) has not been thoroughly rinsed off after cleaning and the zone around the air cap as well as where the air distribution insert of the spray gun is located have not been thoroughly blown dry. | After cleaning, unscrew the air cap and blow dry spray gun / air cap from inside and outside   |
|   | Inappropriate cleaning agents, not pH neutral (spray gun for waterborne paints) or contains too aggressive solvent regenerate (spray gun for solvent-based paints)   | Use pH-neutral cleaning solution (pH 6.0 – 8.0) and/or rinse thoroughly with neutral solution, dry blow spray gun / air cap from inside and outside. Please observe the data sheets of the appropriate cleaning solution.        |
| Black digital display   | Spray gun has been soaked in cleaning solution.  | Do not soak spray gun in cleaning solution.  |
|   | Spray gun remained in the spray gun washing machine, e.g. over night   | Take out the spray gun from the cleaning solution immediately after completion of the cleaning process and dry blow thoroughly.  |
|   | Cleaning solution has been blown into spray gun, with spray gun head pointing upwards and air cap removed at the same time   | Manual cleaning: Please ensure that nozzle head points downwards when cleaning the spray gun. Spray Gun Washer: Spray gun must be flushed with air – ensuring that the spray gun suspension hook is located at the lowest point. |
| No function of round/flat fan control – control swiveling                                       | Air distribution ring has not been positioned in correct location (pin is not located in the drilling) or damaged  | Replace air distribution ring making sure it has been positioned correctly when inserting it   |
| Fan control stuck   | Control knob has been turned counter clockwise into the limitation with too much force; spindle has loosened inside the spray gun thread (does not apply to SATAjet 4000 B)  | Remove regulation with universal spanner; rectify or replace completely  |
|   | Contamination/Corrosion caused by penetration of paint or cleaning agent due to non-compliance of cleaning instructions  |  |
| Spray gun does not shut-off air   | Clogged air piston seat or worn air piston.  | Clean air piston seat and/or replace air piston and packing  |

# Accessories

## SATA CARE SET

The SATA care set is a useful accessory for the spray gun cleaning. It contains the most important cleaning utensils and provides space for additional tools for spray gun maintenance and SATA repair kits.

Art. No. 162628

### Scope of Supply:

- 1 1x cleaning brush, large
- 2 5x cleaning brushes, medium
- 3 5x cleaning brushes, double-sided
- 4 12x nozzle cleaning needles
- 5 1x high performance grease, 100 g



The other tools illustrated are not included in delivery



### SATA® RCS™

SATA clean RCS, Art. No. 145581

SATA clean RCS compact, Art. No. 192518

SATA clean RCS micro, Art. No. 202564



### SATA® multi clean™ 2

Art. No. 38257



### SATA blow gun

Art. No. 15156

Accessories which make the daily work easier and improve the work process.



**SATA® high performance grease**  
Silicone and acid-free, 100 g for spray  
guns  
Art. No. 48173



**SATA® cleaning brushes**  
cleaning brush, large (5x)  
Art. No. 158840  
Cleaning brush, double-sided (10x)  
Art. No. 9209



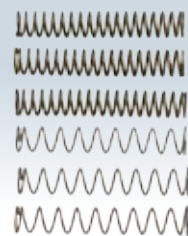
**SATA® air tester™**  
For a quick and reliable check of the atomis-  
ation air in terms of substances causing  
coating flaws  
Art. No. 156299



**SATA® cleaning kit**  
SATA cleaning kit with 2x cleaning brushes,  
medium and 12 nozzle cleaning needles  
Art. No. 64030



**SATA® cert**  
Avoid coating flaws before they occur – by  
a regular check of the spray pattern  
Art. No. 161596



**Pressure springs**  
(each 3 pieces) for paint needle and air pis-  
ton for SATA spray guns except SATaminijet  
Art. No. 133959

# SATA sets standards

... for spray guns, cup systems, breathing protection systems and compressed air filters.

Our close cooperation with painters in craft and industry as well as with the Research and Development divisions of the leading paint manufacturers enables us to create top quality products of ultimate value.

**"SATA Quality" is a trusted term among painters.** They know that SATA products are reliable, sturdy and ergonomic like a duck takes to water.

Together with our competent distribution partners both on

the domestic market and abroad we ensure **highly performing after sales service.**

In Germany and numerous other countries all over the world, SATA is a **leading paint spray gun manufacturer.**

Based on this success, we feel a strong obligation to maintain the high SATA quality standards required by our customers worldwide.



Your SATA dealer



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