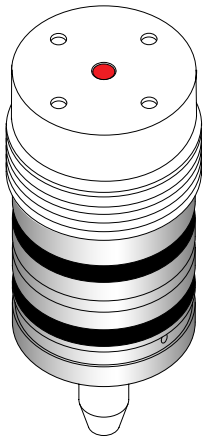
From February 1st, 2017 SAMES Technologies SAS becomes SAMES KREMLIN SAS

A partir du 1/02/17, SAMES Technologies SAS devient SAMES KREMLIN SAS

SAMES KREMLIN



DES01341

User manual

Colour-change Nanovalves

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Throughout the year, our company offers training courses in the operation and maintenance of your equipment.
A catalogue is available on request. Choose from a wide range of courses to acquire the skills or knowledge that is required to match your production requirements and objectives.
Our training courses can be delivered at your site or in the training centre at our Meylan head office.

Training department:
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SAS Sames Technologies operating manuals are written in French and translated into English, German, Spanish, Italian and Portuguese.
The French version is deemed the official text and Sames will not be liable for the translations into other languages.

Colour-change
Nanovalves

1. Health and Safety Instructions

WARNING : Correct equipment performance is guaranteed only if original spare parts distributed by SAMES Technologies are used.

WARNING : This equipment may be dangerous if it is not used, disassembled and re-assembled in compliance with the regulations specified in this manual and in all applicable European standards or national safety regulations.

2. Description

The compact dimensions of SAMES nanovalves allow them to be housed close to the sprayer, with resulting savings in paint, solvent and the time required for changing colours.
The nanovalves are installed in the body of the atomizer.

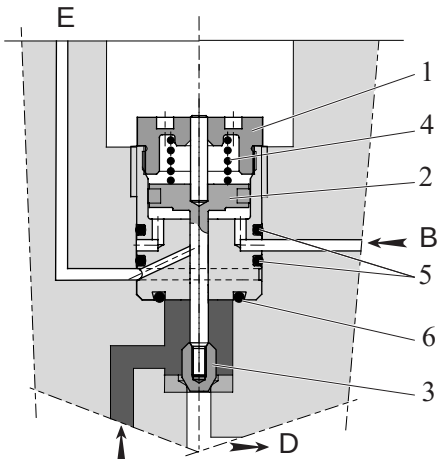
3. Characteristics

- 18 mm
- Length 36 mm
- Opening air pressure 8 to 10 bar

4. Diagrams

Not applicable.

5. Operation

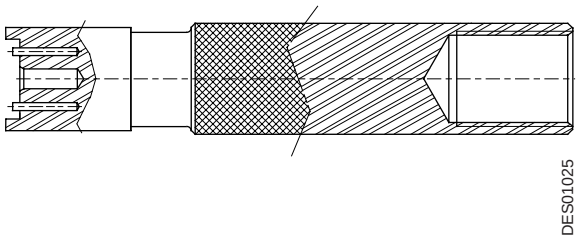


When not in use, the nanovalve is closed. The spring (4) actuates the piston (2) permanently secured to the rod, which closes the needle (3). The product arriving at (C) cannot flow into (D). The piston rod is sealed from air and product by a lip seal.

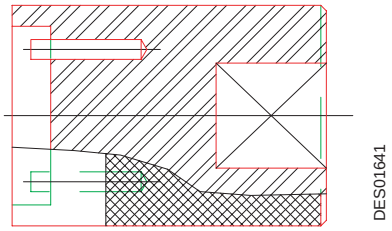
To open the product circuit, the nanovalve is supplied with air by (B).

The seals (5) and (6) prevent air and product from coming into contact with the body of the nanovalve (1).
An outlet (E) is provided in case of a paint surge.

6. Tools



Part number	Description	Qty	Unit of sale
1301832	Tools for removing the 2- point nanovalve	1	1



Part number	Description	Qty	Unit of sale
1403498	Automatic tool for nanovalve tightening	1	1

7. Installation

7.1. Running-in

To guarantee efficient sealing between the needle and its housing, the nanovalve must be operated 200 times before being put into service.

8. Adjustments

Not applicable.

9. Maintenance

9.1. Replacement of a nanovalve

This is limited to the replacement of the seals. To assist maintenance, it is recommended that the outside of the nanovalve be coated with dielectric grease to prevent paint deposits in the event of leaks.

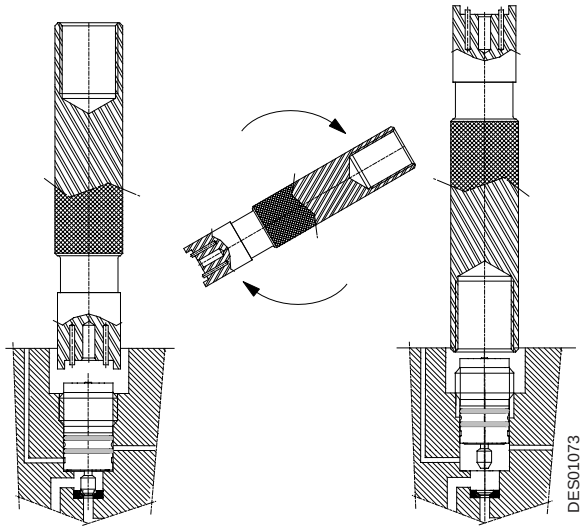
Carry out a periodic inspection for product leakage, particularly around the detection hole. If there is leakage, carry out the repair immediately as other operating faults will develop rapidly.

WARNING : The nanovalve life is about 2.5 millions of cycles.

WARNING : Do not soak plastic parts for long periods in aggressive solvents. Avoid using acids or phenol. Never soak seals in solvents. Seals that are deformed or expanded through contact with a solvent-based product must be replaced immediately.

WARNING : Never use sharp instruments for cleaning.

9.1.1. Disassembly



Using the nanovalve removal tool, unscrew the nanovalve by 4 turns in order to free the thread.

If the plug remains stuck during unscrewing and the nanovalve remains in its housing, disassemble as follows:

•Turn the removal tool round (See drawing below).

•Screw the tool onto the nanovalve. Turn it and remove the nanovalve completely.

9.1.2. Re-assembly

Before reassembling the nanovalve, see the instructions concerning the replacement of the nanovalve seals (see § 9.2 page 7).

Clean the nanovalve housing with solvent. Wipe the housing (check that there is no foreign matter present). Blow through the control tubes (during disassembly of the nanovalve the product may enter the control tube and must therefore be blown out).

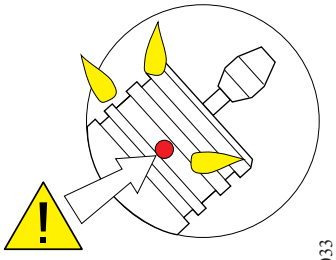
Coat the body of the new nanovalve with dielectric grease. Fit it with a circular movement (to avoid damaging the seals). Screw the new nanovalve home using the tool (P/N: 1301832).

Lock it using the automatic tool (P/N: 1403498) with a tightening torque 1,5 N.m mini to 2N.m maxi.

9.2. Replacing the nanovalve seals

WARNING : The three outer seals must be systematically replaced every time the complete nanovalve assembly is removed.

9.2.1. Disassembly



•Remove the O-ring seals.
•Clean the nanovalve with a fine brush.

WARNING : Be careful not to let any solvent enter the guide hole.

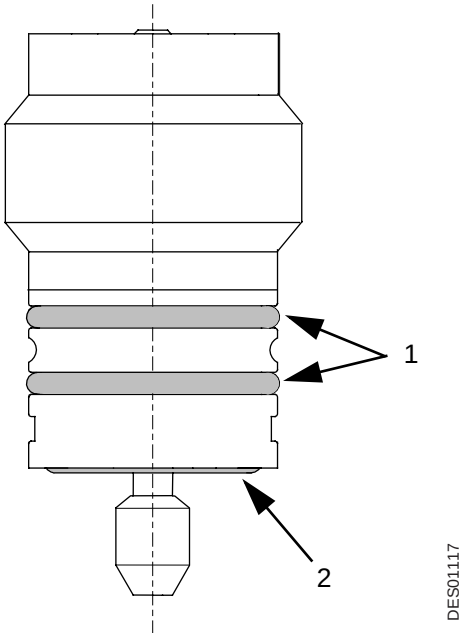
9.2.2. Re-assembly
Apply a thin coat of dielectric grease to the body.

WARNING : The O-rings may become deformed if they dry out.

10. Problems, troubleshooting.

Symptoms	Causes	Remedies
The nanovalve does not open (the operating indicator does not remain in the out position at the rear of the nanovalve).	The control air does not arrive at the nanovalve.	Check the control circuit (control tube bent or disconnected).
	The control pressure is less than 8 bar (120 Psi).	Increase the network pressure.
	The needle control rod is jammed. If there is a leak at the level of the gaskets, the paint may dry if the gun is not used for some time, preventing the needle rod from moving.	Check to see if any product has flowed through the venting hole. If so, replace the nanovalve.
	The piston seal is damaged. If this seal leaks, pressure can not build up in the control chamber.	Remove the nanovalve. Check that the needle can retract by pushing the end of it with a flat tool. If it does not operate correctly, replace the nanovalve.
The nanovalve does not close.	The control air circuit remains pressurised.	The control solenoid valve is not operating correctly. The air cannot be flushed.
	The return spring is broken.	After disassembling the nanovalve, exert a pressure on the end of the needle. Absence of resistance means that the spring is damaged. If this is the case, replace the nanovalve.
	The needle control rod is jammed.	Check that the indicator can retract mechanically by pressing on the end of it with a flat tool. If it does not operate correctly, replace the nanovalve.
The nanovalve no longer fulfils its role as a valve.	If the nanovalve cannot be closed, the needle is not exerting enough pressure on its seat, which results in product leakage.	See previous symptom.
	The needle is faulty.	Remove the nanovalve. Check visually for scratches or faults on the needle. If faults are observed, replace the nanovalve.
	Check for foreign matter on the needle bearing surface.	Clean as necessary.

11. Spare Parts



Item	Part number	Description	Qty	Unit of sale	Maintenance level for spare parts
	1510004	**Nanovalve with orange indicator "chemically inert" o-rings**	**1**	**1**	**1**
1	J3STKL160	O-ring - chemically inert	2	1	1
2	J3STKL121	O-ring - chemically inert	1	1	1

(*)
Level 1 : Standard preventive maintenance
Level 2 : Corrective maintenance
Level 3 : Exceptional maintenance