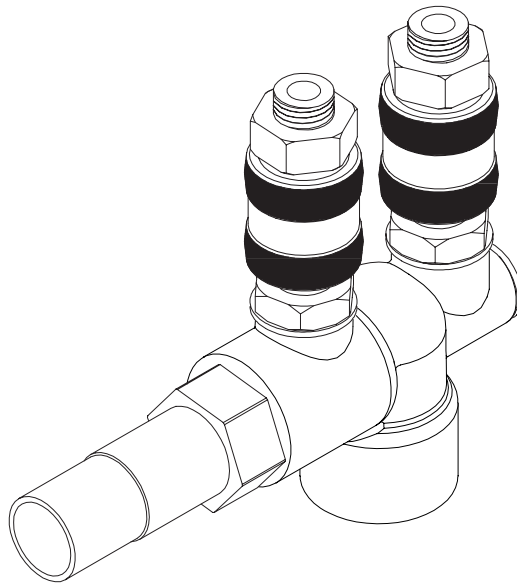




From February 1st, 2017 SAMES Technologies SAS becomes SAMES KREMLIN SAS  
*A partir du 1/02/17, SAMES Technologies SAS devient SAMES KREMLIN SAS*

**SAMES**  **KREMLIN**



DES05108

# User manual

## Powder Pumps

**SAS SAMES Technologies.** 13 Chemin de Malacher 38243 Meylan Cedex  
Tel. 33 (0)4 76 41 60 60 - Fax. 33 (0)4 76 41 60 90 - [www.sames.com](http://www.sames.com)

All communication or reproduction of this document, in any form whatsoever and all use or communication of its contents are forbidden without express written authorisation from SAMES Technologies.

The descriptions and characteristics mentioned in this document are subject to change without prior notice.

© SAMES Technologies 2011



**WARNING** : SAS Sames Technologies is registered with the Ministry of Labour as a training institution.

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:**

**Tel. 33 (0)4 76 41 60 04**

**E-mail: [formation-client@sames.com](mailto:formation-client@sames.com)**

**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.

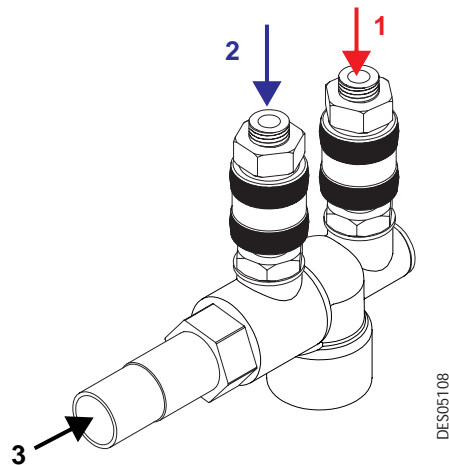
# Powder Pumps

1. Description	4
2. General characteristics	4
2.1. <i>Pneumatical characteristics</i>	4
3. Diagrams	4
4. Working characteristics	5
5. Tools	5
6. Equipment installation	5
7. Powder pump adjustment	5
8. Maintenance	6
8.1. <i>Removing / Re-Assembling the «venturi»</i>	6
8.2. <i>Dismantling / Re-Assembling the «venturi» ejector</i>	6
8.3. <i>Dismantling / Re-Assembling the «venturi» air injector</i>	6
9. Troubleshooting	7
10. Spare parts	8
10.1. <i>«Venturi» assembly</i>	8
10.2. <i>Lift tube assembly for venturi used with a vibrating table</i>	10
10.3. <i>Lift tube assembly for venturi used with a tank</i>	11

## 1. Description

The powder pump (venturi) is a drive-effect pump:

1	Injection airdrives
2	Dilution air
3	Powder transport tube



## 2. General characteristics

### 2.1. Pneumactical characteristics

To ensure a correct running of the equipment, the following pneumactical characteristics are required according to the NF ISO 8573-1 standard :

Maximum dew point at 6 bar (90 psi)	class 4 : + 3 °C (38 °F)
Maximum granulometry of solid polluting agents	class 3 : 5 µm.
Maximum oil concentration	class 1 : 0,01 mg / m <sub>0</sub> <sup>3</sup> *
Maximum concentration of solid pollutant agents	class 3 : 5 mg / m <sub>0</sub> <sup>3</sup> *

\* : values are given for a temperature of 20 °C (68 °F), at the 1013 mbar atmospheric pressure.

## 3. Diagrams

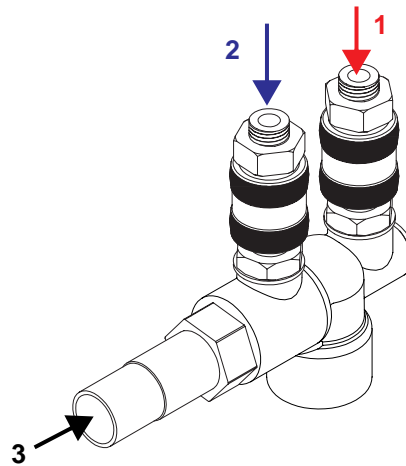
Not applicable.

#### 4. Working characteristics

The powder pump is a drive-effect pump; a high-speed blast of air (powered in [1] - called "injection" air- drives the fluidized powder to the projector by a powder transport tube [3]. To ensure the regularity of low flow rates, additional air called "dilution" air can be added in the powder pump (in [2]).

The flow of powder provided by the powder pump varies with:

- the pressure of the "injection" air,
- the pressure of the "dilution" air,
- the length and the diameter of the powder transport tube,
- the height of the powder in the tank.
- Venturi wear



DES05108

#### 5. Tools

Not specific tools required.

#### 6. Equipment installation

Install the powder pump as per the following:

- As near as possible from the projector or the gun.
- Respecting significant curves of the powder transport tube.

#### 7. Powder pump adjustment

Actions listed here below give the following results:

Action	Result
Injection air pressure increases	Powder flow increases
Dilution air pressure increases	Powder flow decreases
Powder transport tube length increases	Powder flow decreases
Powder transport tube diameter increases	Powder flow increases
Height of the powder in the tank increases	Powder flow increases

## 8. Maintenance



**WARNING :** Cleaning must only be done using compressed air, a cloth or possibly a brush. Never use water to clean the equipment.

The maintenance schedule indicated below is a rough guide. As the SAMES equipment is used, the user should draw up his own maintenance schedule.

To begin with we recommend the following maintenance schedule:



**WARNING :** In order to avoid the powder rinsing up to the control valve, the "injection" air tubes and the "dilution" air tubes must be disconnected before cleaning the powder pump.

Maintenance frequency	Action
Between 40 and 60 hours of work	Change the powder pump "venturi" ejector, clean if necessary. Check that the powder pump injector is clean. If it is dirty, clean it.
Between 150 and 300 hours of work (or more).	Change the powder pump injector.

### 8.1. Removing / Re-Assembling the «venturi»

- Disconnect the supply hoses (injection air, dilution air and powder).
- Withdraw the lift tube either from the tank either from the support (vibrating table).
- Remove the lift tube assembly.
- For reassembling, proceed in reverse order, check that all components are not damaged. Replace if necessary.

### 8.2. Dismantling / Re-Assembling the «venturi» ejector

- Unscrew the powder tail (9)
- Remove the «venturi» ejector (7) from the «venturi» body.
- For reassembling, proceed in reverse order, check that all components are not damaged. Replace if necessary.

### 8.3. Dismantling / Re-Assembling the «venturi» air injector

- Unscrew the plug (4).
- Remove the spring compression (5)
- Remove the air injector (6).
- For reassembling, proceed in reverse order, check that all components are not damaged. Replace if necessary.



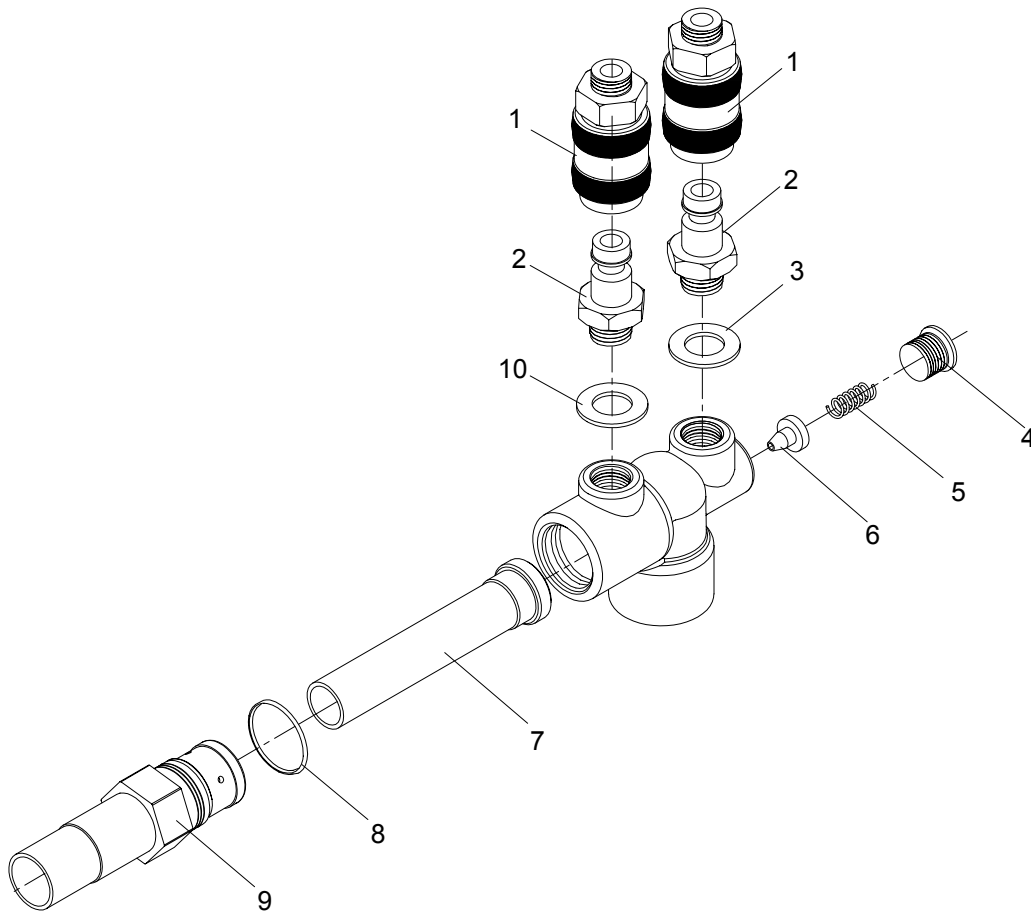
**WARNING :** Check of air injector, which should not be expanded, air outlet opening must be perfectly concentric.

## 9. Troubleshooting

Symptoms	Probable causes	Remedies
The powder does not come out of the gun.	Insufficient "injection" air fl w.	See the settings
	Insufficient air fl w from the compressed air system.	See the settings
	The powder transport tube is blocked.	Clean the powder transport tube with compressed air.
	The powder pump is not correctly connected to its support.	Put the powder pump properly into place by pushing it to the bottom of its support.
The powder comes out in an insufficient quantity .	The gun is not correctly adjusted, "dilution" air fl w is too high.	Reduce dilution air fl w.
	The powder pump "venturi" ejector is worn out.	Change "venturi" ejector.
	The powder transport tube is partially blocked.	Clean the powder transport tube with compressed air.
	The powder transport tube is not properly adapted.	Increase the diameter and shorten the length of the powder transport hose.
	The fl w of the "dilution" air is too high or not high enough.	Adjust the fl w of the "dilution" air.
Irregular powder pattern	Worn parts of the venturi	Change worn parts (injector, venturi ejector, seal washer) <a href="#">see § 10.1 page 8</a>
	Adjustment of the venturi not correct	See the settings

## 10. Spare parts

### 10.1. «Venturi» assembly



Item	Part Number	Description	Qty	Sale Unit	Spare Part Level (*)
	<b>EU72095001</b>	<b>Venturi assembly</b>	<b>1</b>	<b>1</b>	<b>1</b>
1	EU9000272	Male quick release fitting	2	1	2
2	EU9001083	1/8" BSP male plug	2	1	2
3	EU9000853	Washer 1/8" BSP, red nylon	1	1	3
4	EU9001874	1/8" BSP blanking plug	1	1	3
5	EU9001855	Compression spring	1	1	2
6	EU2095013	Air injector	1	1	1
7	EU2090037	Venturi ejecteur	1	1	1
8	EU9001861	O-ring	1	1	1
9	EU2090004	Powder tail	1	1	3
10	EU9000854	Washer 1/8" BSP, blue nylon	1	1	3

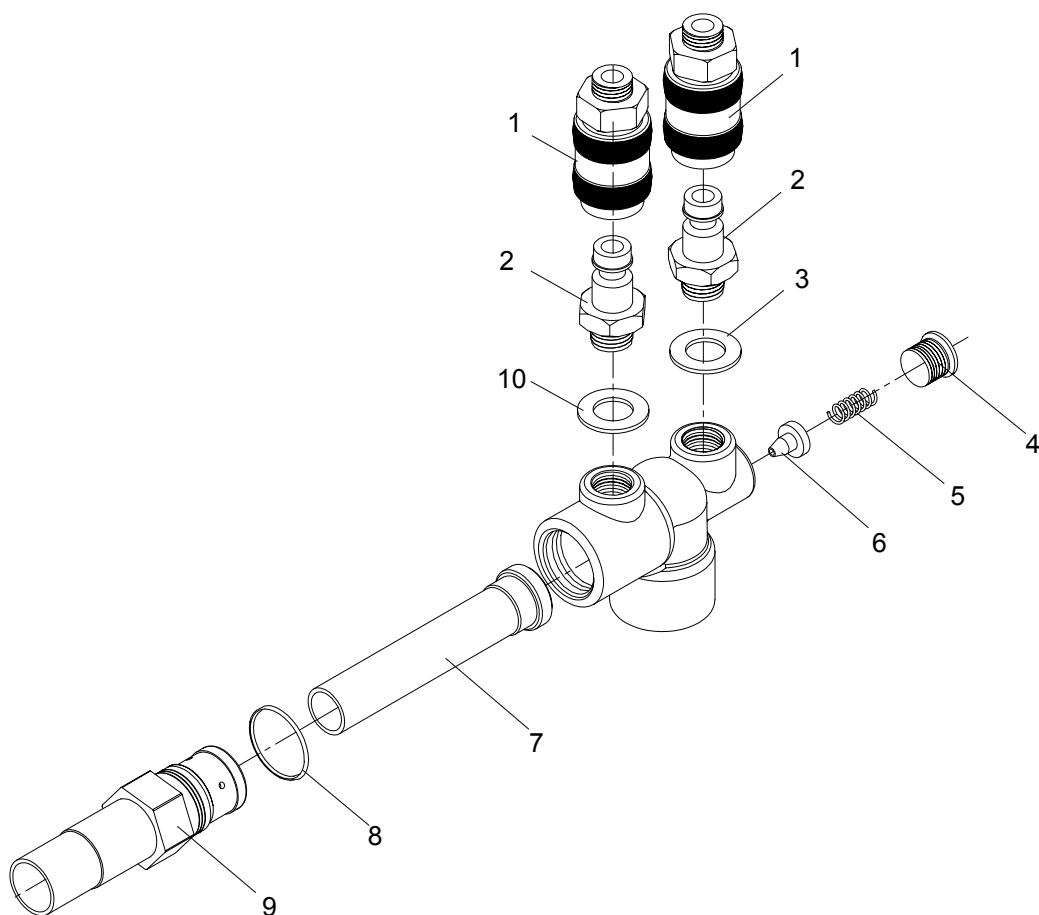
(\*)

Level 1: Preventive maintenance

Level 2: Corrective maintenance

Level 3: Exceptional maintenance.





Item	Part Number	Description	Qty	Sale Unit	Spare Part Level (*)
	<b>EU72095002</b>	<b>Venturi assembly</b>	<b>1</b>	<b>1</b>	<b>1</b>
1	EU9000272	Male quick release fitting	2	1	2
2	EU9001083	1/8 " BSP male plug	2	1	2
3	EU9000853	Washer 1/8" BSP, red nylon	1	1	3
4	EU9001874	1/8" BSP blanking plug	1	1	3
5	EU9001855	Compression spring	1	1	2
6	EU2095013	Air injector	1	1	1
7	EU2090036	Venturi ejecteur	1	1	1
8	J3ETOR030	O-ring	1	1	1
9	EU2090004	Powder tail	1	1	3
10	EU9000854	Washer 1/8" BSP, blue nylon	1	1	3

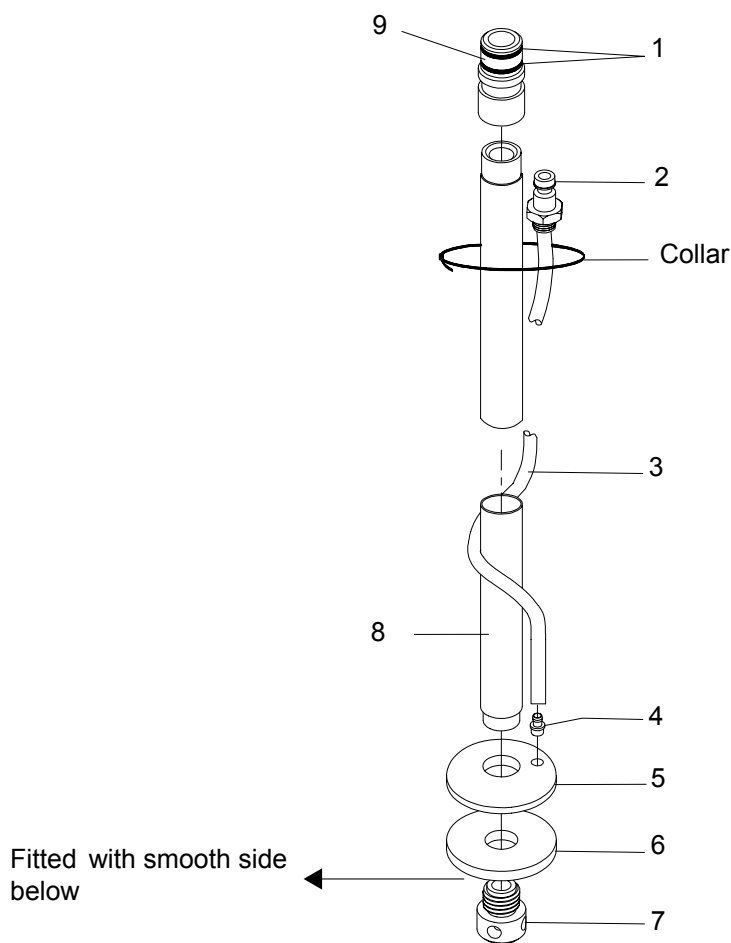
(\*)

**Level 1: Preventive maintenance**

**Level 2: Corrective maintenance**

**Level 3: Exceptional maintenance.**

**10.2. Lift tube assembly for venturi used with a vibrating table**

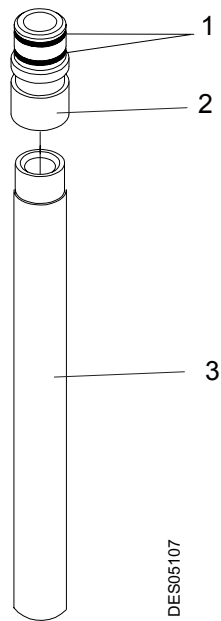


Item	Part Number	Description	Qty	Sale Unit	Spare Part Level (*)
	<b>EU75009006</b>	<b>Lift tube assembly used a vibrating table</b>	<b>1</b>	<b>1</b>	<b>3</b>
1	EU9001863	Black O-ring - viton	2	1	1
2	F6RAJR028	Air fitting	1	1	2
3	EU9000170	Polyurethane tubing, colourless, Dia: 4x 6 mm	0,5	m	2
4	EU9000077	Hose tail Dia: 4mm	1	1	2
5	EU2070024	Fluidising pad	1	1	2
6	EU2070025	Fluidising tile	1	1	2
7	EU2070023	Induction nozzle	1	1	1
8	EU5009028	Lift tube	1	1	3
9	EU5009019	Venturi mounting spigot	1	1	3



**WARNING :** When lift tube and Venturi mounting spigot are changed, it is necessary to stick them with DP 460.

### 10.3. Lift tube assembly for venturi used with a tank



Item	Part Number	Description	Qty	Sale Unit	Spare Part Level (*)
	<b>EU75008006</b>	<b>Lift tube assembly used with a tank</b>	<b>1</b>	<b>1</b>	<b>1</b>
1	EU9001863	Black O-ring - viton	2	1	1
2	EU5009019	Venturi mounting spigot	1	1	3
3	EU5008024	Lift tube	1	1	3

(\*)

**Level 1: Preventive maintenance**

**Level 2: Corrective maintenance**

**Level 3: Exceptional maintenance.**



**WARNING :** When lift tube and Venturi mounting spigot are changed, it is necessary to stick them with DP 460.