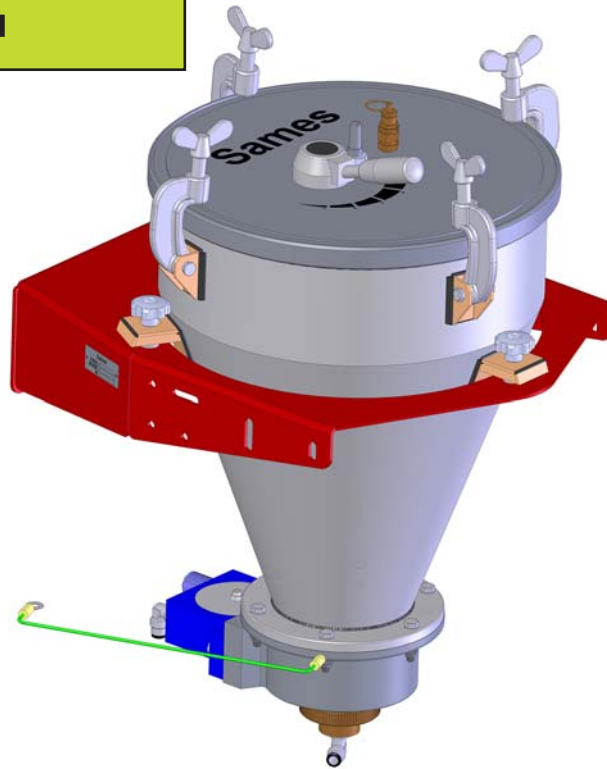




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*A partir du 1/02/17, SAMES Technologies SAS devient SAMES KREMLIN SAS*



# User manual

## CSV 230 Tank Nondestructive Testing and Complex Powders

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# CSV 230 Tank

## Nondestructive Testing and Complex Powders

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## 1. Safety Regulations



**WARNING** : This document contains links to the following user manuals:

- [see RT Nr 6336](#) for the “Mach-Jet” spray gun and “CRN 457” control module.



**WARNING** : This device may be dangerous if it is not used in compliance with the safety regulations specified in this manual.

- The CSV 230 tank must always be installed and used in areas where there is no risk of explosion.
- It is essential to connect the ground thimble on the tank to the ground system thimble of the powder-coating installation (or powder-coating booth) to guarantee the safety of operators and correct operation of the powder-coating equipment.
- All powder filling operations of tank must be carried out in a ventilated area designed for the purpose. **It is imperative to switch off the air supplies during the phases of filling or dump of the tank.**
- Skin-contact or inhalation of products used with this equipment may be dangerous for personnel (cf.: Safety sheets for products used).

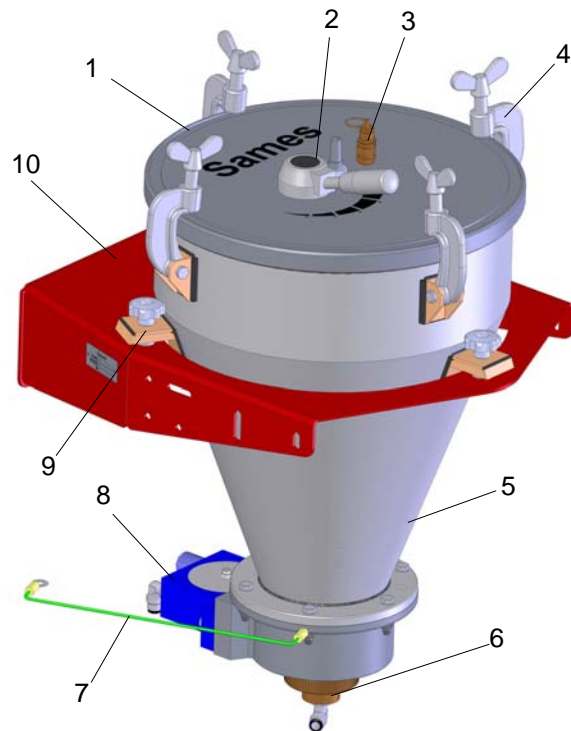
## 2. Description

The CSV 230 tank is designed to supply powder to powder spraying equipment. **The CSV 230 tank is designed for a Nondestructive Testing configuration. It can be however used with special or complex powders to be fluidised using optional components** ([see § 9.2.1 page 15](#)).

It is either installed on the cart e-Jet2 (see 6433 user manual), or in wall version.

The main components of tank CSV 230 are:

Item	Description
1	Cover
2	Lever
3	Quick release valve
4	Locking clamps (4)
5	Tank body containing powder
6	Injector / Ejector tube
7	Ground connection
8	Vibrator
9	Rubber studs
10	Support



### 3. General characteristics

#### 3.1. General Characteristics

- Capacity of the CSV 230: total volume: 15 liters, useful volume: 9.2 liters.
- Total weight of tank and support without powder: 17.35kg.
- The vibrator used on tank CSV 230 is a turbine model with compressed air supply. The acoustic pressure level produced by the vibrator at one meter from the tank is never more than 70 dB(A) in the specified conditions of use.
- Operating temperature range: 0 °C to 40 °C (32 °F to 104 °F).

#### 3.2. Pneumatic Characteristics

Characteristic	Value
Fluidization air pressure	1 bar (15 psi)
Characteristics of the compressed air supply as per standard ISO 8573-1	
Maximum dew point at 6 bar (90 psi)	Classe 4 soit + 3 °C (+ 38 °F)
Maximum grain size of solid foreign matter	Classe 3 soit 5 microns
Maximum oil concentration	Classe 1 soit 0,01 mg/m <sub>0</sub> <sup>3</sup> (*)
Maximum concentration of solid foreign matter	Classe 3 soit 5 mg/m <sub>0</sub> <sup>3</sup> (*)

**m<sub>0</sub><sup>3</sup> : volume reduced to normal atmospheric pressure (1013 mbar) and a temperature of 0 °C (34 °F).**

The filter installed on the equipment is used to ensure correct operation of the equipment in the case of accidental non-compliance with compressed-air filtering recommendations.

Equipment air-supply pressure	7 bar +/- 1 bar (*)
-------------------------------	---------------------



**WARNING : (\*) Pressure in excess of 8 bar may cause operating malfunctions.**

#### Consumption of the equipment

Nondestructive testing version	Injection 1 to 12	between 160 and 220NI/min
Powdering version	Injection adjusted to 6 and shutter adjusting	190NI/min

#### 4. Fonctionnement

The powder contained in the tank is vibrated then fluidised by an upward flow of air, distributed evenly by a porous cone located at the bottom of the tank.

The powder is taken, measured then sucked up by the injector and evacuated thanks to the present pressure in the tank.

The injection and fluidisation airs add up and serve as air of transport in the powder hose.

The shutter situated on the lid of the tank allows to fill the passage of the powder in a partial or total way (separation air and powder) to regulate mechanically the flow. The pressure of injection and the position of the shutter serve to optimize the desired flow of powder.



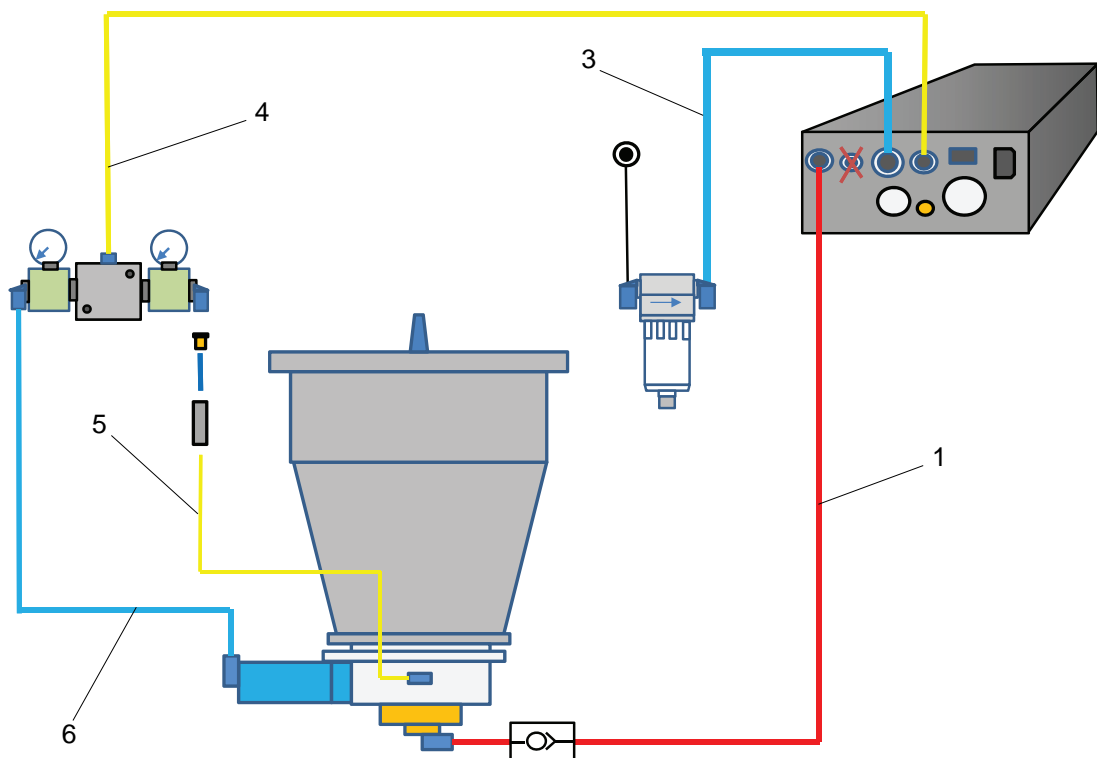
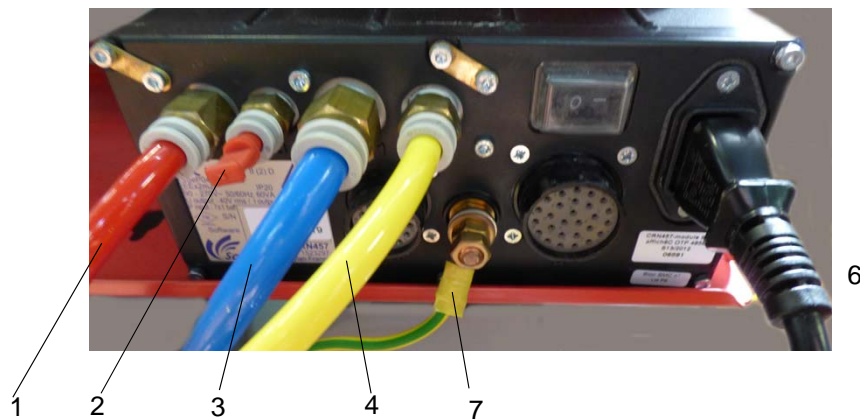
**WARNING :** The maximal height of filling of the tank never has to exceed the ejector.

#### 5. Tools

No specific tools.

## 6. Installation in wall version

### 6.1. Connections



DE506265

Reference	Hose name	Hose characteristics
1	Injection air powder pump	Red Polyurethane hose, dia: 8 mm
2	Closed outlet of dilution air	-
3	General air supply	Blue Polyurethane hose, dia.: 10 mm
4	CS206 pneumatic control unit air supply	Yellow Polyurethane hose, dia.: 8 mm
5	Fluidization air	Yellow Polyurethane hose - dia: 6 mm
6	Vibrator air supply	Blue Polyurethane hose, dia.: 8 mm
7	Ground connection	Green / Yellow wire



## 6.2. Connection of “Mach-Jet Gun” and mains plug

Connect the spray gun to plug “A” on the back of the control module ([see RT Nr 6336](#)).



**WARNING :** To avoid damaging the plug, make sure that the spray gun positioning pin is opposite the positioning pin on the CRN 457 base plate.

The plug is locked by pushing it into the socket; comply with positioning pins: The flat on the spray gun cable plug must be at the top, a “click” must be heard. The click indicates that the plug is correctly locked in position.

The plug is unlocked by pulling it out of the socket.



Positioning pins

The mains power cable is connected to the back of the CRN 457 module (see figure below). It is imperative to check that the plug sector is connected to the ground.



Mains power cable

Plug “A”, spray gun

## 7. Using the CSV 230 tank in wall version

### 7.1. Main rules

The equipment has previously been installed according to the safety rules ([see § 1 page 4](#)) and the instructions indicated ([see § 6 page 8](#)), follow the steps described below:

- **Step 1:** Connect the ground cable of the tank to a conducting and connected ground part of the application booth; the ground potential must be equal to the potential of the part to be painted.
- **Step 2:** Supply electrically and pneumatically the equipment.
- **Step 3:** Fill the tank with powder and close the cover with clamps, **attention** tank under pressure in operation.
- **Step 4:** Put in operation the CRN 457 control module ([see RT Nr 6336](#)) (switch located in the back of the module). Configure the CRN 457 control module ([see RT Nr 6336](#)), operation with vibrating table.
- **Step 5:** Choose the type of needle and select on the spray gun or on the control module the suitable high voltage characteristic.
- **Step 6:** Direct the needle of the spray gun towards the booth and activate the trigger; adjust the regulator of the vibrator (recommended pressure 1 bar) and the regulator of fluidization (recommended pressure 1 bar).

#### 7.1.1. In Nondestructive testing version

The CSV 230 tank is equipped with a 2.7mm injector, a 2.7mm ejector and either a hose dia. 6mm or 7 mm delivered.

Close the CSV 230 tank shutter completely (position 0). The flow of the developer product is adjustable on the CRN 457 module or directly on the spray gun by varying the parameter of injection (0 - 12). If the flow is not sufficient, it is also possible to open slightly the shutter.

#### 7.1.2. In powdering version

This equipment can be used to coat complex powders, very strong flows can be then reached. However the limit of reasonable use of a conventional electrostatic spray gun (charge capacity) is reached at 15kg / hour of powder ( 250g / min ).

The CSV 230 tank is then equipped in option of a special powdering ejector (Dia: 1,7mm), of an EAV 9/ 13 hose and of a powder fitting (Dia: 10), [see § 9.2.1 page 15](#).

Adjust the injection parameter (on the CRN 457 module or directly on the spray gun) to 6. Then adjust the flow of powder by varying the position of the shutter on the tank.

For information, with a long 6m hose dia.9mm and with a standard powder

Shutter position	1	2	3	4	5
Powder flow (g/min)	40	120	160	230	680

## 8. Maintenance

### 8.1. Cleaning



**WARNING :** Cleaning operations must only be carried out using compressed air and a wet cloth. Neither water nor solvents must be used to clean the equipment (spray gun and control module). The equipment must be cleaned at the end of each shift.

- Check regularly the air filter cartridge replace if necessary.
- If there is water or oil in the filter, dump the bowl and check the air dryer or oil remover in the installation. To dump the bowl, unscrew the black plastic part located underneath the filter bowl.

### 8.2. Cleaning of the check valve fitted on the injection air supply

- **Step 1:** Swith off the air supplies.
- **Step 2:** Disconnect the hose upstream to the check valveby pressing on the green ring, then downstream on the red ring.



- **Step 3:** Then clean the check valve with compressed air. If necessary, clean the injector of the tank.

### 8.3. Dump of tank

#### 8.3.1. Procedure 1

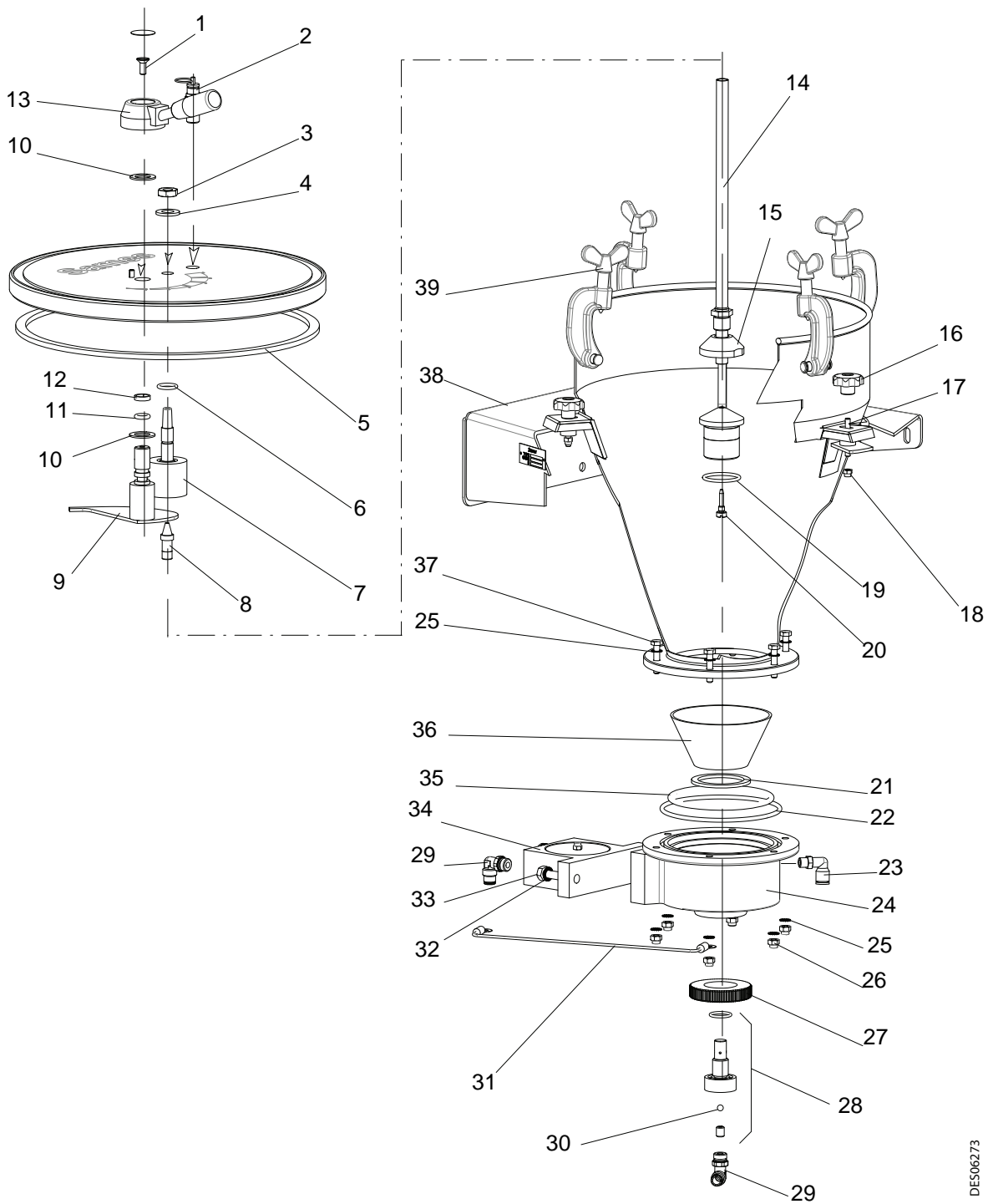
- **Step 1:** Disconnect the air supplies on the tank.
- **Step 2:** Disconnect the ground wire of the tank
- **Step 3:** Remove the cover by screwing the clamps.
- **Step 4:** Unscrew the three bolts securing the tank on the support. Remove the tank by taking care not shocking the vibrator.
- **Step 5:** Empty the tank in the booth then clean the remaining powder with compressed air.

#### 8.3.2. Procedure 2

- **Step 1:** Disconnect the injection air supply from the tank.
- **Step 2:** Place a recovery container under the tank
- **Step 4:** Unscrew the threaded ring and withdraw the injector/ ejector assembly upward. The powder falls then in the container. Clean the remaining powder with compressed air.

## 9. Spare Parts

### 9.1. CSV 230 Tank



DIES06273

Item	Part Number	Description	Qty	Sale unit	Maintenance level for Spare part (*)
	<b>910020274</b>	<b>CSV 230 tank</b>	<b>1</b>	<b>1</b>	<b>3</b>
1	X2BVFP223	F/90 M6 x 16 zinc coated screw	1	1	3
2	F1SSRL015	Quick release valve	1	1	3
3	X2BEHU012	H M 12 nut	1	1	3
4	X2BDZU012	M 12 fan washer	1	1	3
5	440014	Cover seal	1	1	2
6	J2CTCN032	O-ring	1	2	1
7	440005	Funnel	1	1	3
8	900002670	Powder ejector Dia: 2,7	1	1	2
9	1203225	Shutter with shaft	1	1	3
10	548169	Washer PTFE	2	1	2
11	J2CTCN021	O-ring	1	6	1
12	J3TSEG121	Guiding ring	1	1	2
13	Q1BPGN139	Pilot lever	1	1	3
14	900013350	Powder ejector tube	1	1	3
15	442001	Body	1	1	3
16	200000317	Bolt	3	1	3
17	Q4BPGS075	Rubber stud	3	1	3
18	X2BEHS005	M5 nylstop nut	3	1	3
19	J2CTCN067	O-ring	1	5	1
20	1405927	Injector, caliber 27	1	1	1
21	440022	Flat seal	1	5	1
22	J2CTCN229	O-ring	1	2	1
23	F6RLCS184	Elbow union	1	1	3
24	325829	Fluidization chamber	1	1	3
25	X2BDVX006	Fan washer	12	1	3
26	X2BEHS006	M6 nylstop nut	6	1	3
27	440021	Nut	1	1	3
28	456423	Check valve assembly	1	1	2
29	130001160	Swivel union	2	1	2
30	K6RKBL118	Ball (included in item 28)	1	5	1
31	910020523	Ground cable	1	1	3
32	X2BDVX008	Fan washer	2	1	3
33	X2BVHA285	H M8x30 zinc coated screw	2	1	3
34	180000087-AT	Vibrator	1	1	2
35	J2CTCN190	O-ring	1	1	1
36	302398	Porous cone	1	1	1
37	X2BVHA228	H M6x30 zinc coated screw	6	1	3
38	900013278	CSV 230 support	1	1	3
39	200000187	Calliper assembly	4	1	3

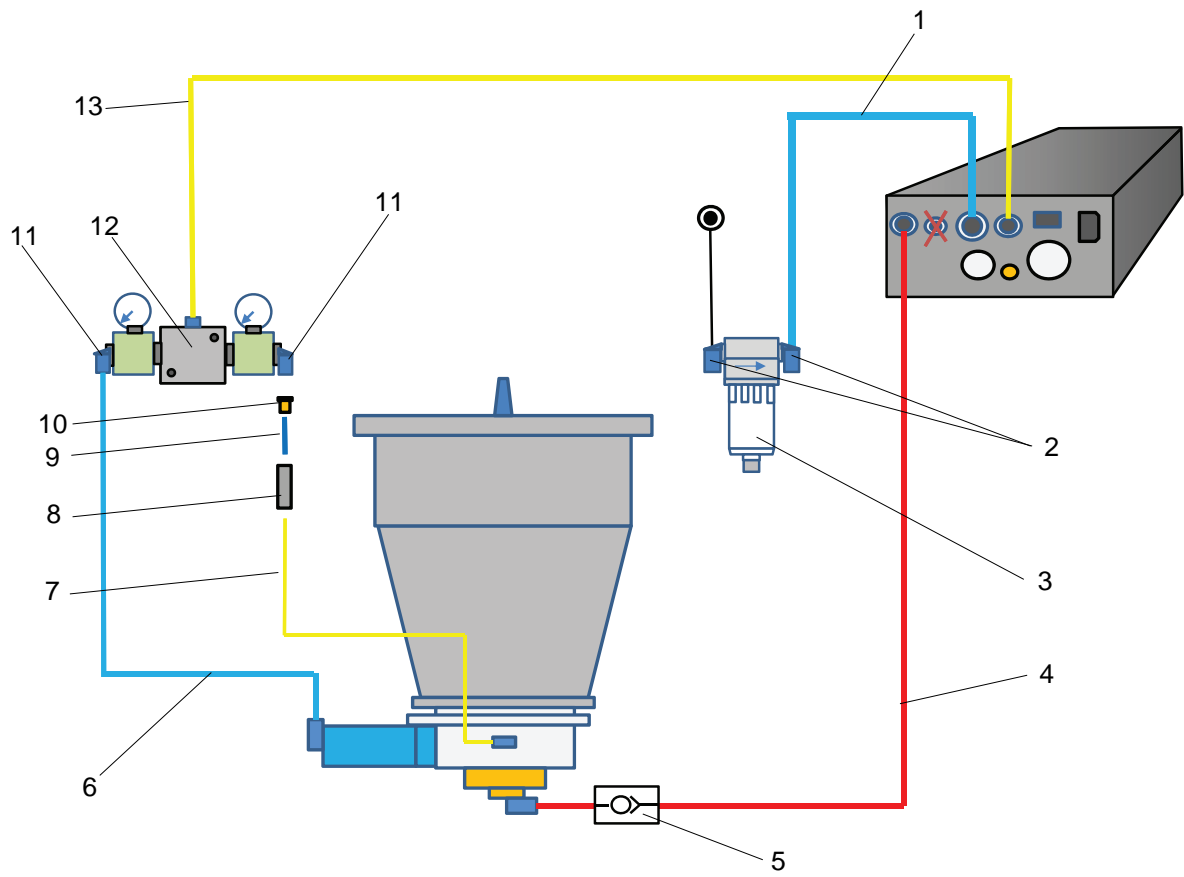
(\*)

**Level 1: Standard preventive maintenance**

**Level 2: Corrective maintenance**

**Level 3: Exceptional maintenance**

## 9.2. Tank, wall version



DES06265

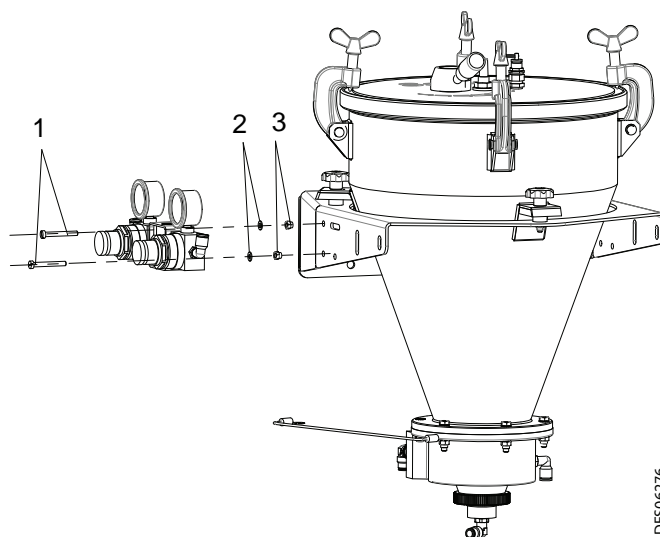
Item	Part Number	Description	Qty	Sale unit	Maintenance level for Spare part (*)
	<b>910020460</b>	<b>CSV 230 tank, wall version</b>	<b>1</b>	<b>1</b>	<b>3</b>
	<b>910020274</b>	<b>CSV 230 tank</b>	<b>1</b>	<b>1</b>	<b>3</b>
1	U1GLBT133	Blue Polyurethane hose Dia: 8x10	2	m	2
2	F6RLCS204	Elbow union	2	1	2
3	160000152	Filtering cartridge - 5 µm	1	1	1
4	U1GRBW197	Red Polyurethane hose, Dia: 5.5 x 8	2	m	2
5	F6RRAF043	Check valve	1	1	2
6	U1GLBT142	Blue Polyurethane hose Dia:5.5 x 8	0.75	m	2
7	U1CBBJ001	Yellow rilsan hose, Dia: 4x6	0.75	m	2
8	F6RLUS483	Dual union	1	1	3
9	U1CBBT003	Blue rilsan hose, Dia: 6x8	0.04	m	2
10	900002308	Brass restrictor	1	1	3
11	F6RLCS185	Elbow union	2	1	2
<b>12</b>	<b>1502844</b>	<b>CS206 pneumatic control unit</b>	<b>1</b>	<b>1</b>	<b>3</b>
13	U1GJBJ194	Yellow Polyurethane hose Dia: 5.5 x 8	2	m	2
		<b>Not shown</b>			
	<b>1524463</b>	<b>“Mach-Jet Gun” spray gun</b> ( <a href="#">see RT Nr 6336</a> )	<b>1</b>	<b>1</b>	<b>3</b>
	<b>1523297</b>	<b>CRN 457 control module</b> ( <a href="#">see RT Nr 6336</a> )	<b>1</b>	<b>1</b>	<b>3</b>
	E4PCAL206	Main power cable 10A 250V	1	1	3
	910015302	CRN 457 securing kit	1	1	3
	910003576	Special powder union on spray gun	1	1	2

#### 9.2.1. Options for use in powdering version

Item	Part Number	Description	Qty	Sale unit	Maintenance level for Spare part (*)
	441216	Ejector for powdering	1	1	2
	U1FGBA104	Swivel fitting	6 m	m	3
	1409627	Powder fitting Dia.:10	1	1	2

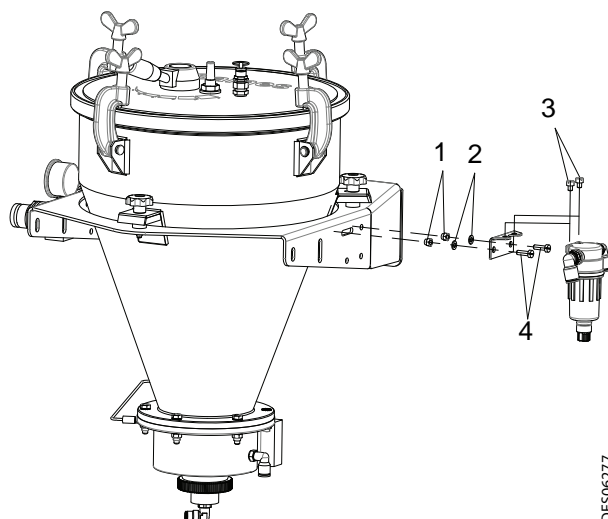
### 9.3. Fastening of the equipments on the support for the wall version

#### 9.3.1. CS206 pneumatic control unit



Item	Part Number	Description	Qty	Sale unit	Maintenance level for Spare part (*)
1	X2BVCB190	C M 5 / 40 zinc coated screw	2	1	3
2	X2BDMU005	M5 U zinc coated washer	2	1	3
3	X2BEHS005	M5 U nylstop zinc coated nut	2	1	3

#### 9.3.2. Filtre



Item	Part Number	Description	Qty	Sale unit	Maintenance level for Spare part (*)
1	X2BEHS005	M5 U nylstop zinc coated nut	2	1	3
2	X2BDMU005	M5 U zinc coated washer	2	1	3
3	X4FVSY685	Chc M5 x 6 stainless steel 316 screw	2	1	3
4	X2BVCB183	C M5 x 16 zinc coated screw	2	1	3