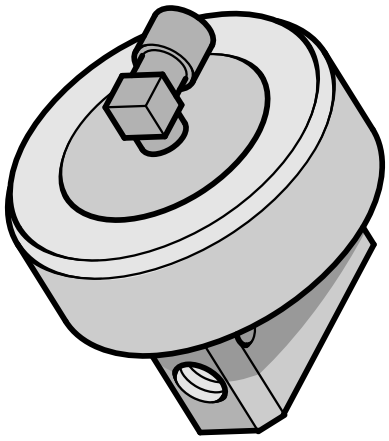
# INSTRUCTIONS MANUAL

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



# PAINT REGULATOR (Ang)

# HIGH PRESSURE VERSION (20 bar -300 PSI)

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PART NUMBER 759816 (USA)
759817 (EUR)




1st edition 08-94 RT 6035

## II. DESCRIPTION

The SAMES paint high pressure regulator 759 816 (American connectors) or 759 817 (European connectors) can be mounted on the paint circuit of any kind of system. Their installation only requires an air supply from a low flow compressed air manual release valve (1 Nm3/h). Connection between the regulator and the air valve is done with a Nylon hose diameter 2.7 x 4. It only consumes very little compressed air. There exist manifolds with integral regulator for robotic use only.

The role of the pressure regulator is to make the pilot trigger (PT) pressure (which is stable) and the paint pressure at the tip (which can be variable without using the regulator) equal.

In the case where the atomizer is stationary, the regulator can be placed anywhere on the paint circuit and it works as follows:

- The paint supply pressure (for example pressurised pot) can vary (the compressed air pressure from the mains may vary in accordance with the number of users).
- The pilot valve of the regulator absorbs this pressure variation and continues to deliver to the regulator, within the time, constant pilot pressure (except if there is a big drop from the compressor breakdown for example).
- If the paint supply pressure does not fall too much and remains above the regulator pilot pressure, the regulator delivers to the atomizer a paint pressure equal to the pilot pressure (itself maintained constant by the compressed air release valve).
- Because the paint circuit pressure drop between the paint regulator and the atomizer is constant (constant length and diameter of the paint hose) for a paint with a given viscosity and flow, the paint pressure constant at the outlet of the regulator generates a constant flow to the atomizer.

The SAMES pressure regulator therefore plays the role of a paint flow regulator.

In the case where the atomizer reciprocates, it is essential that the regulator be placed "at the gun" (integral with the manifold or next to the manifold of the atomizer) and it works as follows:

- it absorbs the paint pressure variations generated by the paint supply, as in the case where the atomizer is stationary,
- it absorbs the paint pressure variations due to the variation in the paint column height, itself generated by the reciprocating (difference in altitude between the atomiser and the ground).

For the SAMES regulator to work correctly, it is important to respect the following conditions:

1. To pilot the regulator with a compressed air manual release valve with sufficient air flow (1 Nm3/h at 6 Bar).

For an automatic installation with different paint flows as a function of the colour, the supply release valve can be replaced by a voltage/air pressure converter itself perhaps controlled by a PLC.

2. To use a regulator pilot pressure lower than the lowest pressure available from the compressor (usually 5 Bar).

3. To use a paint supply pressure higher than the pilot air pressure (regulator forcing).

Maximum paint inlet pressure: 20 Bar (300 PSI).

4. To use the regulator within its working range.

Paint pressure range: from 1 Bar minimum to 20 Bar maximum.

Paint flow range: from 100 cm3/mn minimum to 1000 cm3/mn maximum.

Viscosity range: from 1 cPs minimum to 250 cPs maximum.

For paints or liquids where the viscosities or the flow are outside the ranges indicated above, see Chapter III.4.6.

The paint flow generated by a SAMES pressure regulator is constant, subject to conditions 1,2,3 and depend:

* on the pilot pressure
* on the paint viscosity
* on the pressure drops downstream the regulator, on the paint circuit (paint injector, calibrated restrictor, diameter and length of the paint hose)
* for a regulator not placed by the TRP: on the difference in altitude between the atomizer and the regulator.

It is therefore necessary to again determine the regulator pilot pressure for each of the materials.

## II - MAINTENANCE

• The time a wearing part lasts depends mainly on the quality of the paint and the working conditions of the atomiser. Tests carried out in "standard" working conditions gave a "standard " lifetime of around 2 million needle cycles.

• The main wearing part :

  • the regulator diaphragm: 544 731

• Use of cleaning solvents

When one wants to clean an electrostatic atomiser with a solvent or a thinner, one must never soak the atomiser or its components (for example: nozzle, O rings, body). SAMES advises using a brush or a rag dipped in a cleaning liquid.

Very polar solvents which are extremely conductive (such as ketones, polyalcohols, alcohols) must be avoided because of the risk of short circuits. Use insulating solvents (resistivity above 100 MΩ.cm) such as xylene, toluene, white spirit.

Solvents or thinners used for cleaning should have a flash point above the ambient temperature.

Dry carefully with compressed air the surfaces that have been cleaned with liquid; clean and slightly grease with insulating Vaseline H1G MIN 017 those parts which rub (needle) or isolating the HV (interfaces, sleeves, resistors, etc.).

Before doing any such work make sure:

- that the high voltage generator has been turned off (with the mains turned off if possible) and that the system has been electrically discharged to ground;
- that there is no pressure in the paint hose and that the paint supply has been stopped;
- that the paint circuit has been rinsed (manifold and dump) with an insulating and non-aggressive solvent and then blown dry with compressed air.
- that there is no pressure in the air hoses (AA, FA, PT, PD, PR ).

## III - TROUBLE SHOOTING

| SYMPTOMS | POSSIBLE CAUSES | REMEDIES |
|---|---|---|
| Paint leaks into the pilot air hose of the regulator. | Regulator nut 449 699 not tight enough and/or diaphragm 544 731 deteriorated. | Tighten nut and/or replace diaphragm. |

## VI - SPARES PARTS

Please refer to Chapter II.2.8.2 on how to use them.

Europe type regulator: 759 817 delivered with connectors.

U.S.A. type regulator: 759 816 delivered with connectors.

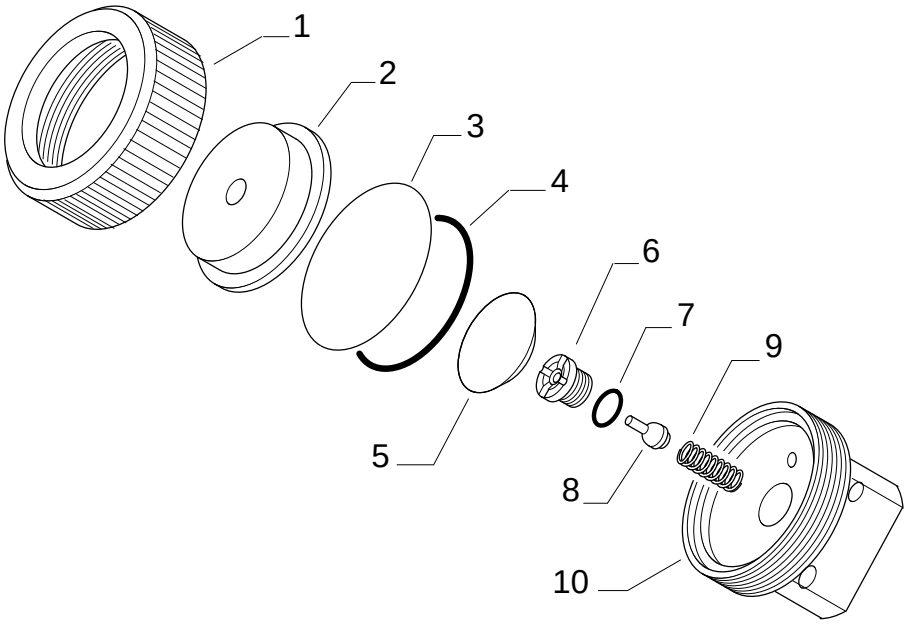
Standard spring: 742 759 (for paint flow ≥ 100 cc)mn).

Regulator spring for small flow: 749 525 (for paint flow < 100 cc / mn, to be put in place of the standard spring).

Europe type regulators for small flow: 758 180 (for paint flow < 100 cc / mn).

Support for regulator close to TRP: 437 293.

| Mark | SAMES ref. | Part | Quantity | Sold in units of |
|---|---|---|---|---|
| 1 | 548 532 | Nut | 1 | 1 |
| 2 | --- | USA regulator plug | 1 | --- |
| 2 | --- | Europe regulator plug | 1 | --- |
| 4 | J2F TDF 472 | O ring 50.52 x 1.78 | 1 | 5 |
| 3 | 544 731 | Diaphragm | 1 | 5 |
| 5 | 547 992 | USA Diaphragm stuffing | 1 | 1 |
| 5 | 449 545 | Diaphragm stuffing | 1 | 1 |
| 6 | 742 761 | Seat | 1 | 5 |
| 7 | J3T TCN 007 | O ring 10.5 x 2 | 1 | 5 |
| 8 | 740 511 | Needle | 1 | 1 |
| 9 | 742 759 | Standard spring | 1 | 1 |
| 10 | --- | USA regulator body | 1 | --- |
| 10 | --- | Europe regulator body | 1 | --- |



For American version only (759816)

| Quantity | U* | Marking | SAMES ref. | Part |
|---|---|---|---|---|
| 2 | 1 | Pi-Po | F6R PDQ 212 | Elbow connector 1/8" NPT - 3/8" OD |
| 1 | 1 | Pr | F6R PDQ 206 | Elbow connector 1/8" NPT - 1/4" OD |

Europe type connector for pressure regulator (759817)

| Quantity | U* | Marking | SAMES ref. | Part |
|---|---|---|---|---|
| 2 | 1 | Pi-Po | F6R PDK 310 | Elbow connector 1/8" NPT - 6 x 8 |
| 1 | 1 | Pr | F6R PDK 308 | Elbow connector 1/8" NPT - 4 x 6 |

• U = Sold in units of