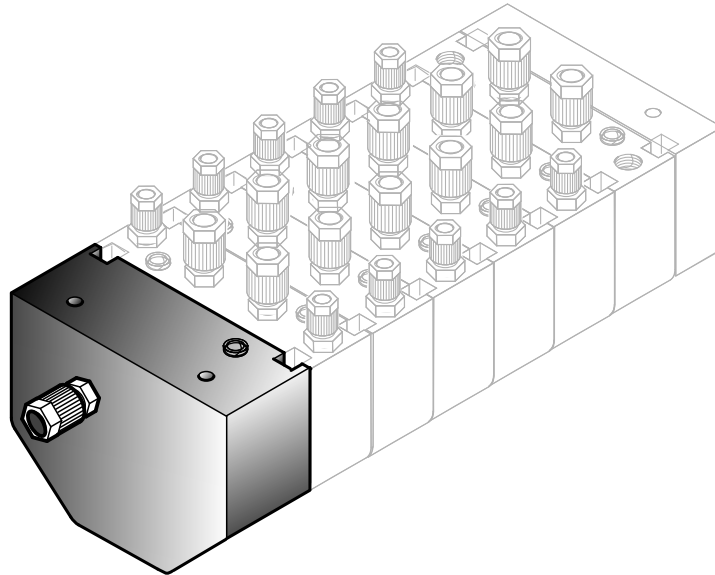


## OPERATING MANUAL

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



### MODUCLEAN - ANNEXE RT 6055 LIMITER UNIT (Ang)

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The information and characteristics provided in this manual are not contractual and SAMES reserves the right to change this equipment without notice.

## 1 - DESCRIPTION

The limiter unit of a MODUCLEAN model allows a significant amount of the product to be saved during colour changing.

Its MODUCLEAN type design enables it to be assembled to the final distribution device by means of retaining strips, thus closing the block.

**The limiter unit must not be mounted on the solvent/air distribution unit.**

This unit is equipped with a micro valve which possesses a grooved needle, thus operating as a limiter when the micro valve is closed.

The tightness for the passage of the material is ensured by the O-ring.

### 1.1 - CHARACTERISTICS

Driven by	:	Air filtered, dehydrated, with oil removed
Driver pressure	:	Between 5 and 8 bars
Response time	:	Response time between activating the control solenoid valve and opening the micro valve 50 ms for 0.5 m of the pipe 300 ms for 15 m of the pipe (with a Rilsan calibre pipe Ø of 2.7/4 between the two)
Max counter pressure	:	40 bars
Supply pressure	:	10 bars
Viscosity range	:	40" CA4 max. Contact Sames for higher values.
Fitted weight (distributor unit)	:	250g
Fabrication materials	:	Black Delrin

The colour changers are located as close to the sprayer as possible in order to minimise product loss on colour changing and to optimise the time required to change colour.

## 1.2 - COMPOSITION

A "MODUCLEAN" block assembly with limiter comprises :

- A limiter unit (1) at the output .
- N distributor units + inlet end piece (2) .
- A micro valve (3) (per limiter unit) .
- Retaining strips (4) .
- An O-ring (5) .
- A product distribution connector (6) .
- A snap-on micro valve control connector (7) .
- Micro valve dismantling gear Ref. 736170 (8) .

NB:The MODUCLEAN block assembly is held in position by 4 screws at the ends.

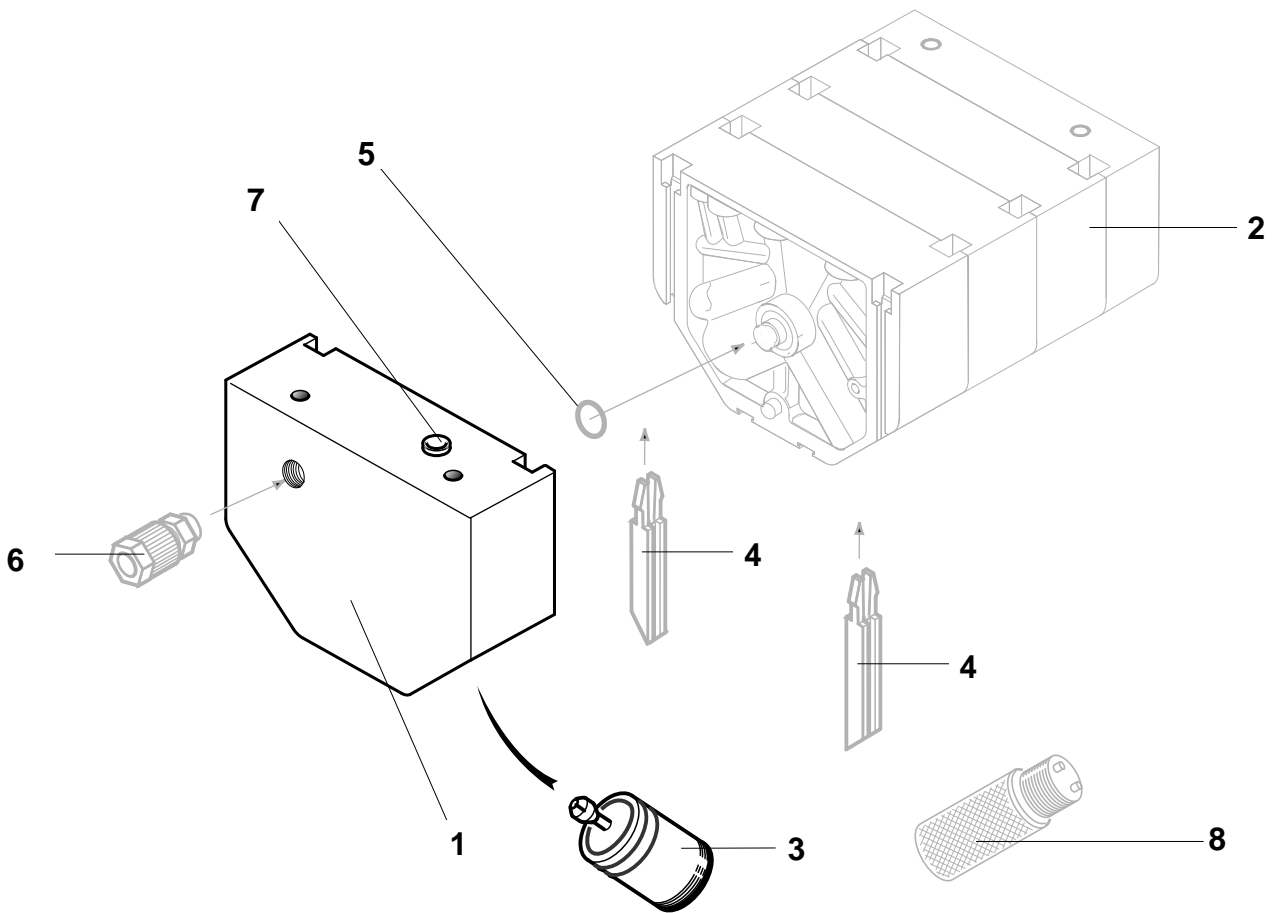
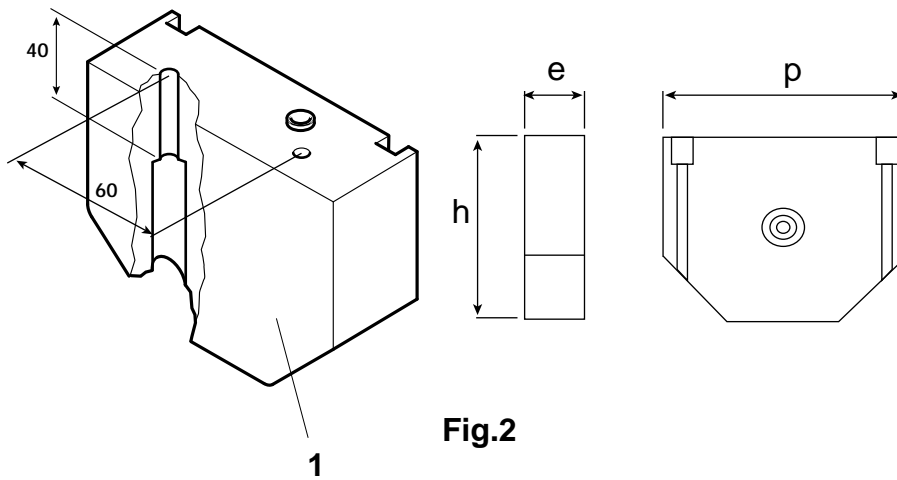


Fig. 1

**LIMITER UNIT DESCRIPTION** (continued)**Dimensions**

N°.	Designation	d	h	w
1	Limiter unit	104	80	48



## 2 - OPERATION

### 2.1 - MICRO VALVE OPERATION

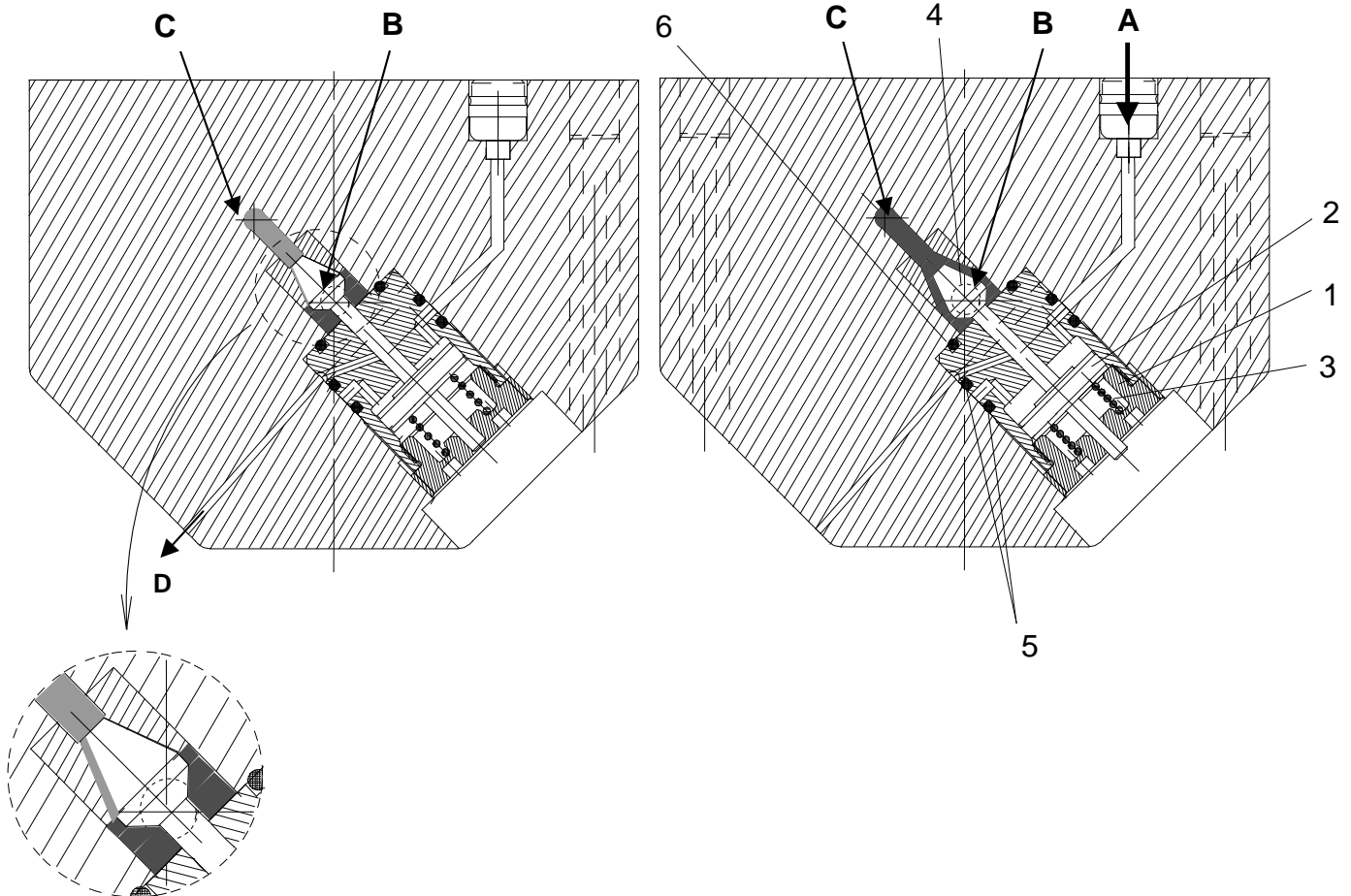
The opening and closing control of the micro valve is effectuated by a solenoid valve.

**Fig. 3**

Micro valve closed

**Fig. 4**

Micro valve open



At rest, the micro valve is normally closed . The product arriving at (B) can flow out through the orifice (C) with a low flow (a groove on the needle limits the flow ) .

When the micro valve control air is pressurised (A), the piston (2) compresses the spring (3) by pulling the needle (4) .

This allows the product to flow freely from (B) to (C).

Tightness around the body of the micro valve (1) in relation to air and the product is ensured by the O-rings (5) and (6).

Detection holes (D) are provided to cater for leaks.

## 2.2 - LIMITER UNIT OPERATION

### 2.2.1 Limiter unit operation

#### 1/ Flushing Phase (solvant + air )

- The paint valve and the head valve are closed.
- The bleed valve is opened.
- Flushing is effectuated.
- At the end of the flushing, the pressure is atmospheric.
- The limiter valve is opened.

#### 2/ Circuit filling phase

Filling can be broken down into 4 phases.

##### 2.1 Compression :

- The bleed valve is closed and the paint valve is opened.
- The paint input compresses the air in the circuit.
- The limiter valve remains open.

##### 2.2 Decompression :

- The paint valve is closed and the bleed valve is opened.
- The air decompresses and escapes through the bleed valve.
- The limiter valve is always open.

##### 2.3 Bleed priming :

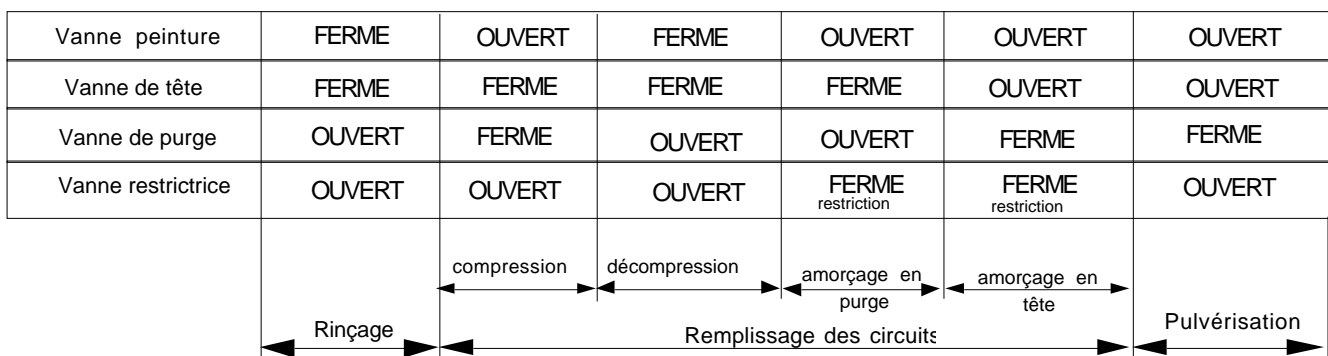
- The limiter valve is closed.
- In this position, the limiter valve reduces the passage section and as a result the paint flowrate is lowered. The flow meter measures and limits the loss of product.
- The paint valve is opened.

##### 2.4 Head priming :

- The bleed valve is closed .
- The head valve is opened.
- The limiter valve remains closed.

#### 3/ Spraying phase

- The limiter valve is opened.
- The spraying is effectuated.
- Spraying is effectuated.

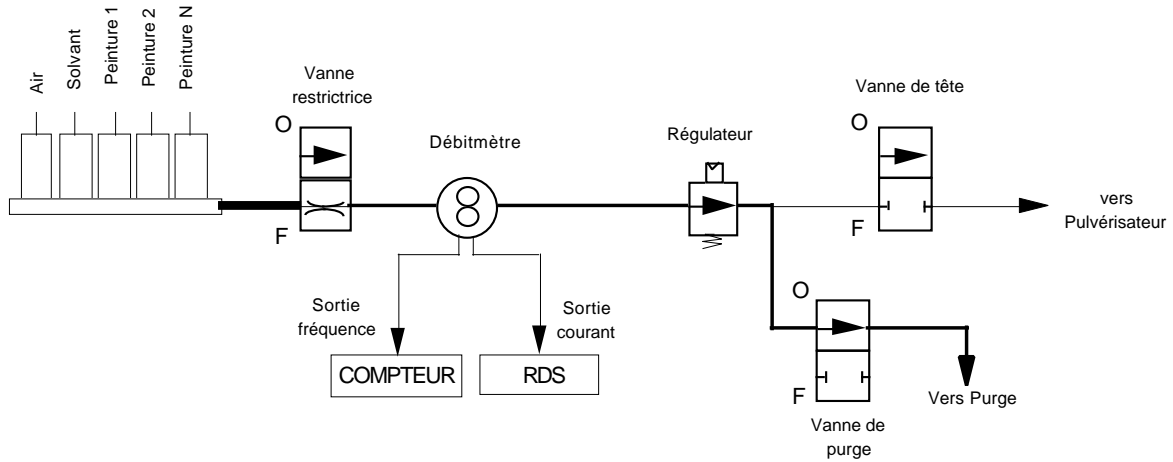


**Fig. 5**

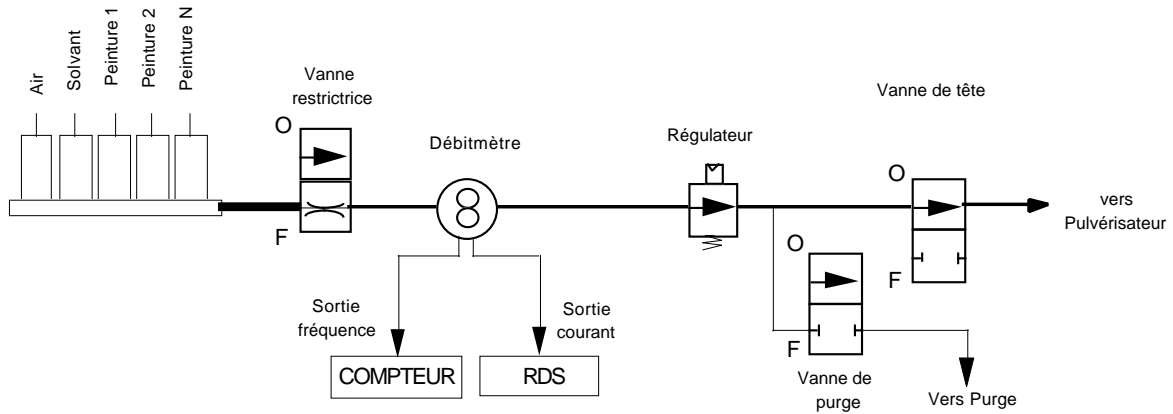
**LIMITER UNIT OPERATION (continued)**

**2.2.2 Principle diagrams**

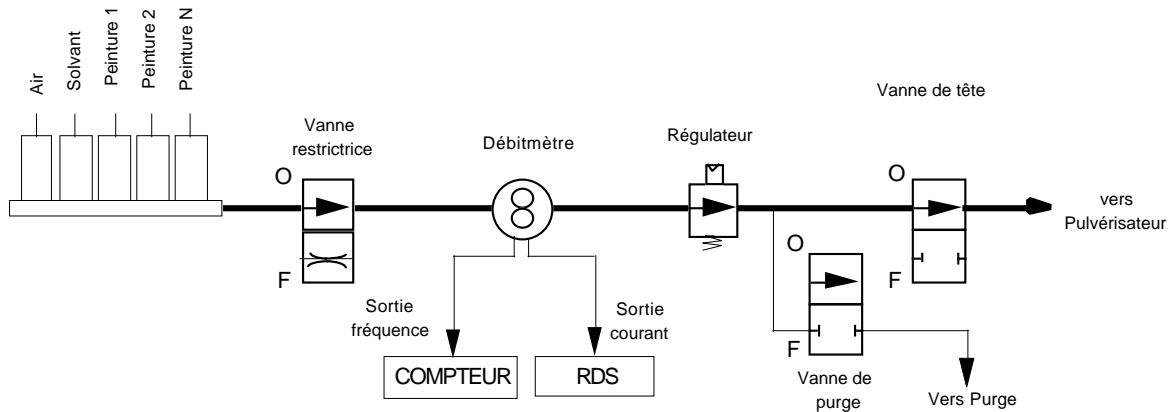
Diagrammatic configuration of bleed priming (circuit filling phase)



Diagrammatic configuration of head priming (circuit filling phase)



Diagrammatic configuration for spraying phase



**Fig. 6**

### 3 - MAINTENANCE / CLEANING

This only consists of replacing the micro valve (1) or its external seals (2) and (3) .

Check periodically in order to detect the presence of leaks :

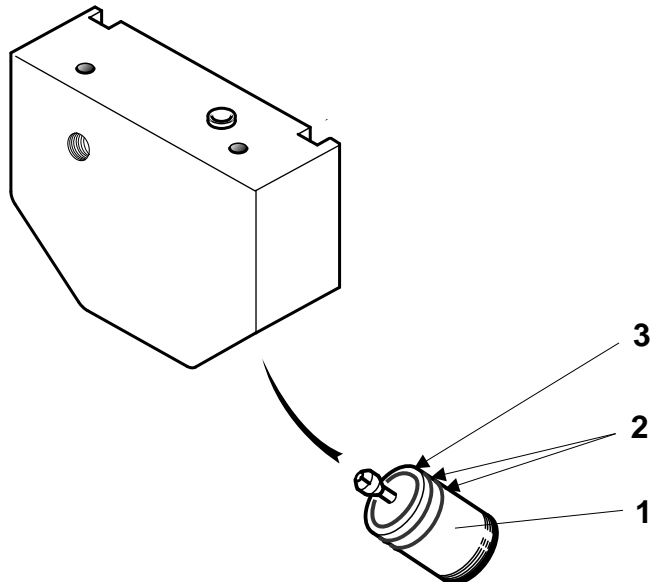
- Between the limiter element and the associated distributor unit.
- At the leak detection holes (see figure 3 (D) ).
- At the micro valve : of the thread screw, of the signal.

Should a leak occur, repair as soon as possible, otherwise operating faults will appear very shortly afterwards.

- Avoid soaking plastic parts for prolonged periods of time in aggressive solvents as well as the use of acids and phenol.
- Soaking the seals in solvents is forbidden.

Any deformed or deflated seal must be changed.

- Never use sharp edged tools for cleaning.



**Fig. 7**



#### **4 - DISMANTLING / REASSEMBLING A LIMITER UNIT**

Refer to the instructions in the RT 6055 manual

#### **5 - DISMANTLING/ REASSEMBLING A MICRO-VALVE**

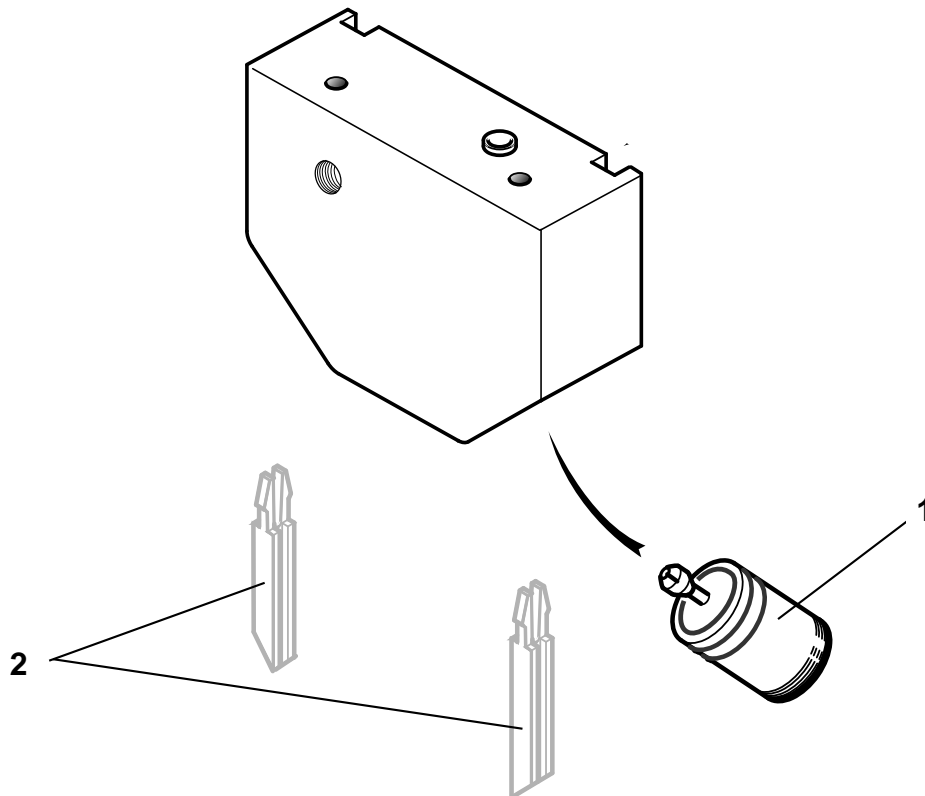
Refer to the instructions in the RT 6055 manual

#### **6 - FAULTS / REPAIRS**

Refer to the instructions in the RT 6055 manual

**7 - SPARE PARTS**

**LIMITER UNIT WITH A MICRO VALVE**



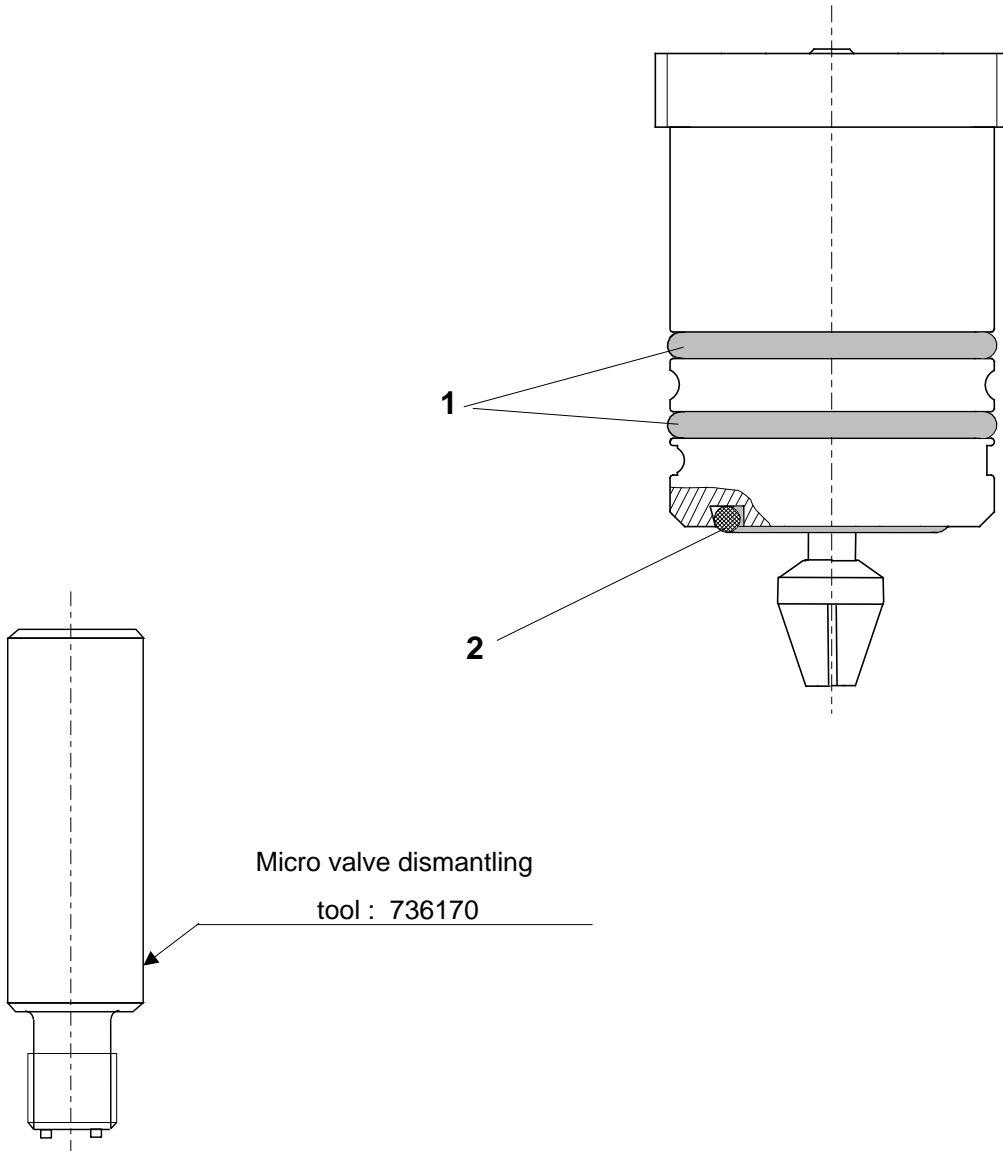
**UNIT + micro valve with VITON seals Key ref. 855798**

REF	Article code	Designation	Quantity	Sale Unit
1	759140	2 CHANNEL MICRO VALVE	1	1

2	738267	RETAINING STRIP	2	10
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**SPARE PARTS (cont.)**

**MICRO VALVE - VITON SEALS**



Complete micro valve Key ref. 759140

REF	PLAN N°	QTY	DESIGNATION	SALE UNIT
1	J2FTDF239	2	O-ring 18.77 / 1.78	1
2	J2FTDF160	1	O-ring 12.42 / 1.78	1