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

DES02566

User manual

Atomizer TRP 501
Without High Voltage

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WARNING : Sames Technologies is registered as a "Training Center" approved by the "Ministry of Employment".
Trainings with the aim of getting the necessary know-how to use and for the maintenance of your equipment can be organised all along the year.
A catalog is available upon request. Among the different training programmes proposed, you will be able to find the training which corresponds the best to your needs and production purposes. These trainings can be organised in your premises or in our training center based in our headquarters in Meylan.

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Atomizer TRP 501
Without High Voltage

1. Health and Safety Instructions

This manual contains links to the following user manuals:

- see RT Nr 6009 for the TRP 500 user manual.
- see RT Nr 6021 for the microvalve user manual.
- see RT Nr 6273 for the ball paint regulator

1.1. Precautions for Use

WARNING : The equipment classification is: II 2 G.

This document contains information that all operators should be aware of and understand before using atomizer **TRP 501**. This information highlights situations that could result in serious damage and indicates the precautions that should be taken to avoid them.

1.2. Warnings

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

WARNING : Safety may be jeopardized if this equipment is not operated, disassembled and reassembled in compliance with the instructions given in this manual and in any European Standard or national safety regulations in force.

WARNING :

Before carrying out any cleaning or general work on atomizers in the spraying area, the high voltage generator must be switched off and the atomizer HV circuit discharged to the ground.
Only metal containers can be used for cleaning liquids and they must have a reliable ground connection
Electrostatic spraying equipment must be serviced regularly in accordance with the information and instructions given by SAMES Technologies.
The equipment must only be used by personnel trained by SAMES Technologies.
Inside the booth it is forbidden to use a naked flame, glowing object or a device likely to produce sparks. It is also forbidden to store inflammable products, or vessels that have contained them, close to the booth.

The surrounding area must be kept clear and clean.
The use of very high voltage increases the risk of sparks. SAMES Technologies atomizers and high-voltage electrostatic generators are designed to minimize this risk. Although the HV electrode is the only accessible part, the atomizer head must be isolated from any other grounded part by at least 2.5 mm per kV.

In addition, a careful check must be made to ensure that any conducting or semi-conducting part closer than 2.5 m to the atomizer is correctly grounded.

If it is not, electrical charges capable of causing sparks could build up on it. Operating personnel must wear anti-static shoes and gloves to avoid this risk.

Finally, for the same reasons, the spraying area must have an anti-static floor, such as concrete, metal duckboard, etc.
It is essential to provide sufficient ventilation in the spraying booths to avoid the build up of inflammable vapors.

1.3. Important Recommendations

1.3.1. Compressed Air Quality
The air must be filtered to a level that will guarantee a long life time and prevent any pollution during painting.
The filter must be installed as close as possible to the facility. The filter cartridges must be changed regularly to ensure that the air is clean.
The inside of hoses supplying air to the atomizer and the ports of the quick-disconnect plate must be clean and free of any traces of paint, solvent or other foreign matter.

WARNING : The guarantee does not cover damage caused by foreign matter such as paint, solvent or other substances entering the air circuits of the TRP 501.

1.3.2. Product Quality
The paint must be filtered to prevent any damage to the atomizer.
The maximum permissible particle size in the atomizer is 200 microns.

1.3.3. O-ring Seals
Use the seals recommended in this manual. For solvent-based products, seals in contact with the product must be perfluorinated seals resistant to swelling or chemical attack. The TRP 501 is only guaranteed to operate correctly if it is used with seals whose size and material conform to this manual.

1.3.4. Mechanical Collision
The guarantee does not cover damage resulting from the operating environment (for example collision with the robot).

1.4. Guarantee

Under the guarantee, which applies only to the buyer, **SAMES Technologies** agrees to repair operating faults resulting from a design fault, materials or manufacture, under the conditions set out below.

The guarantee claim must define, in writing, the exact nature of the fault concerned.
The **SAMES Technologies** guarantee only covers equipment that has been serviced and cleaned according to standard procedures and our own instructions, that has been fitted with parts approved by SAMES or that has not been modified by the customer.

More precisely, the guarantee does not cover damage resulting from:

- the customer's negligence or inattentiveness,
- incorrect use,
- failure to follow the procedure,
- use of a control system not designed by SAMES Technologies or a SAMES Technologies control system modified by a third party without written permission from an authorized SAMES Technologies technical agent,
- accidents such as: collision with external objects, or similar events,
- flooding, earthquake, fire or similar events,
- inadequately filtered paint and solvent,
- use of seals not complying with SAMES Technologies recommendations,
- pollution of air circuits by fluids or substances other than air.

SAMES Technologies atomizer **TRP 501** is covered by a one-year guarantee for use in two 8-hour shifts under normal operating conditions.

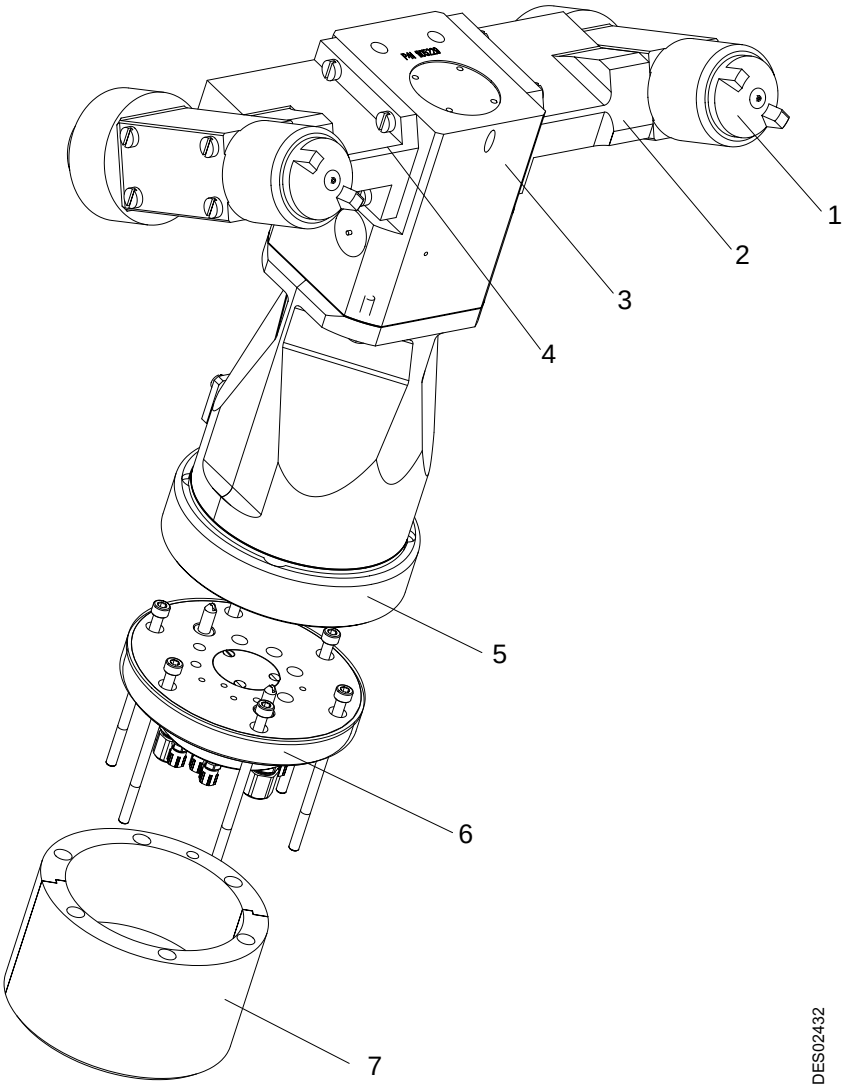
The guarantee will take effect from the date of the first startup or of the provisional acceptance report.

Under no circumstances, either in the context of this guarantee or in other contexts, will **SAMES Technologies** be held responsible for physical injury or intangible damage, damage to brand image and loss of production resulting directly from its products.

2. Description

2.1. General

Atomizer **TRP 501** is an atomizer fitted with two atomizer heads known as **TRP 500.** It is used in automatic mode for spraying waterborne or solvent-based liquid paints. Each spraying head is fitted with an air cap and fan spray nozzle producing a fan spray whose angle can be adjusted by means of swivel rings. The dimensions of this fan spray can be set by adjusting the fan air and atomizing air.



1	TRP 500 fan spray
2	TRP left spacer
3	Complete TRP manifold assembly
4	TRP right spacer
5	Removable quick-disconnect plate
6	Fixed quick-disconnect plate
7	Robot flange

2.2. TRP
see RT Nr 6009.

2.3. Left and right spacers
These spacers are used to secure and connect each atomizer head either side of the manifold block.

2.4. Complete Manifold Assembly
The manifold assembly consists of a supply block common to both atomizer heads. It comprises air passages for atomizing air, fan air and control air (needle and flushing), as well as a paint inlet and paint flush outlet.

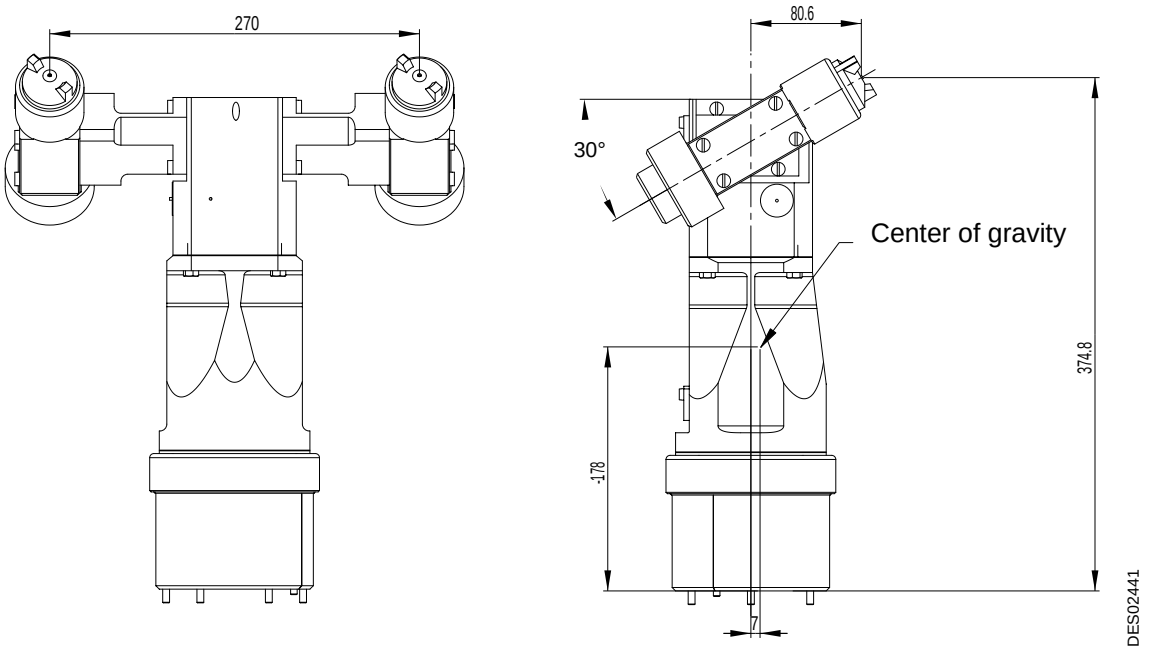
2.5. Removable Quick-Disconnect Plate
This is the first part of the quick-disconnect plate and remains permanently secured to the atomizer when it is dismantled. It allows the air and product supplies to pass through the two atomizer heads.

2.6. Fixed Quick-Disconnect Plate
This is the second part of the quick-disconnect plate. It is secured to the robot flange, allowing fast connection / disconnection during any maintenance operation on the atomizer. It is fitted with unions that channel the various air and paint supplies from the robot arm.

2.7. Robot flange
It is used to secure the atomizer to the robot arm.

3. Characteristics

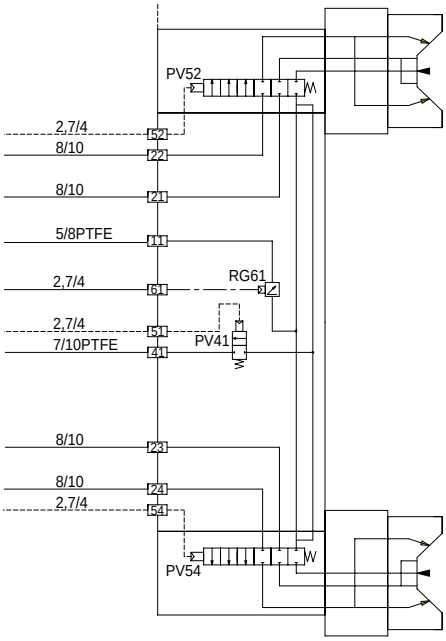
3.1. Overall Dimensions



3.2. General

Weight without hose	4.5 kg
Other characteristics	see RT Nr 6009

4. Fluid Diagram



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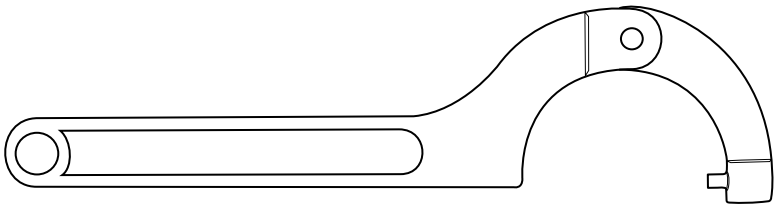
52	Needle pilot (TRP No. 1)°
22	Fan air (TRP No. 1)°
21	Atomizing air (TRP No. 1)°
11	Paint supply
61	Regulator control
51	Dump pilot
41	Dump
23	Atomizing air (TRP No. 2)°
24	Fan air (TRP No. 2)°
54	Needle pilot (TRP No. 2)°

Note: Hose dimensions are given in mm.

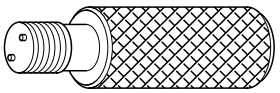
The needle pilot air is used to start or stop atomization.
The atomizing air determines the fineness of atomization and projects the mist well clear of the air cap, avoiding soiling.
The fan air determines the pattern diameter (wide or narrow pattern).

5. Tools

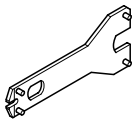
For TRP 500 atomizing heads: see RT Nr 6009.



P/N	Description	Qty	Unit of sale
W6CERG036	Securing nut tightening tool	1	1



P/N	Description	Qty	Unit of sale
1303689	Microvalve removal tool	1	1



P/N	Description	Qty	Unit of sale
741015	Regulator nut removal tool	1	1

6. Installation

6.1. Precautions Prior to Installing an Atomizer

WARNING :

- The robot wrist and atomizer must be set to 0°.
- There must be no torsional or tensile strain on the hoses. If this precaution is not observed (0° with ± one turn), there is a high risk of hoses being torn out or bursting and unions being damaged.

WARNING : If a hose is replaced, ensure it is long enough to comply with the requirement above.

6.2. Installing Atomizer TRP 501

- Connect the air and product supplies to the fixed quick-disconnect plate.
- Fit both parts of the robot flange around the hoses, secure the fixed quick-disconnect plate to the robot flange and tighten using the six M5 x 90 screws, position the assembly correctly checking that the positioning pin is aligned on the robot arm.
- With one hand, support the already fitted atomizer from below and with the other manually tighten the nut, without forcing, then finish tightening with tool Ref…

6.3. Shutdown and Startup Procedures

see RT Nr 6009

6.4. Procedure for Changing an Atomizer

1 Run a rinse cycle.
2 Bring the robot to maintenance position.
3 Switch off the various air and product supplies where applicable. If necessary, reduce the circuit pressure by controlling valves PV 52 and PV 54, having first switched off the supplies (automatic or manual sequence).
4 Check that the general "air present" lamp is extinguished.
5 Check that the "atomizing air" pressure switch is off.
6 Holding the atomizer with one hand, use the other hand to loosen the nut securing the manifold - removable quick-disconnect plate assembly to the fixed quick-disconnect plate.
7 Remove the atomizer.
8 Fit the new atomizer on the fixed quick-disconnect plate.

WARNING : Check that the restrictors are correct. To obtain the same performance from the paint range, the restrictors must be strictly identical to those previously fitted.

9 With one hand, support the atomizer from below and with the other manually tighten the locking nut, without forcing then finish tightening with tool Ref.:
10 Switch the air supplies back on.
11 Run an operating test (cycles, application simulation).

7. Adjustments

see RT Nr 6009

8. Maintenance

8.1. Assembly / Disassembly

8.1.1. TRP Atomizing Head

- Remove the four screws securing each atomizing head to the right or left spacers.
- Pull the TRP in its axial direction from the spacer.
- For disassembly / reassembly of the TRP, nozzle and air cap see RT Nr 6009.

8.1.2. Left and Right Spacers

Disassembly

- Remove the four M6 x 20 screws to disassemble the spacer.
- Be careful not to lose the various O-rings.

WARNING : Check the condition of the O-rings and replace if necessary.

Reassembly

- Check that the seals and resistor are correctly fitted, position the spacer, fit the four screws and tighten them.

8.1.3. Manifold Assembly

Disassembly

- Remove the right and left spacerssee § 8.1.2 page 14.
- Remove the four screws between the manifold block and insulating tube.
- Remove the block.
- Unscrew the unions from the block.
- Extract the PTFE seal.

Reassembly

WARNING : Check the condition of the various components and replace if necessary.

- Carry out the disassembly operations in reverse order.

8.1.4. Removable Quick-Disconnect Plate

Disassembly

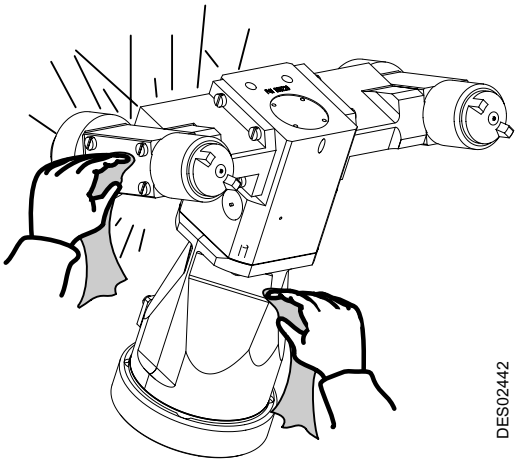
- Remove the 6 M5 x 16 screws to detach the quick-disconnect plate from the manifold assembly.
- Be careful not to lose the seals.
- Disconnect the air and product supply hoses.

Reassembly

- Reassemble in reverse order to disassembly.

8.2. Cleaning

WARNING : Do not use a manual solvent gun. Clean with a rag, soft brush and approved cleaning product.



- Every 8 hours, clean the outside of the atomizer with a clean rag moistened with solvent.
- Check that the air cap holes are not blocked.
- Dry carefully with compressed air.

8.2.1. Cleaning the Air Cap

- Disassemble the cap.
- Leave to soak in solvent then clean with a clean rag and soft brush.
- Dry carefully with compressed air.

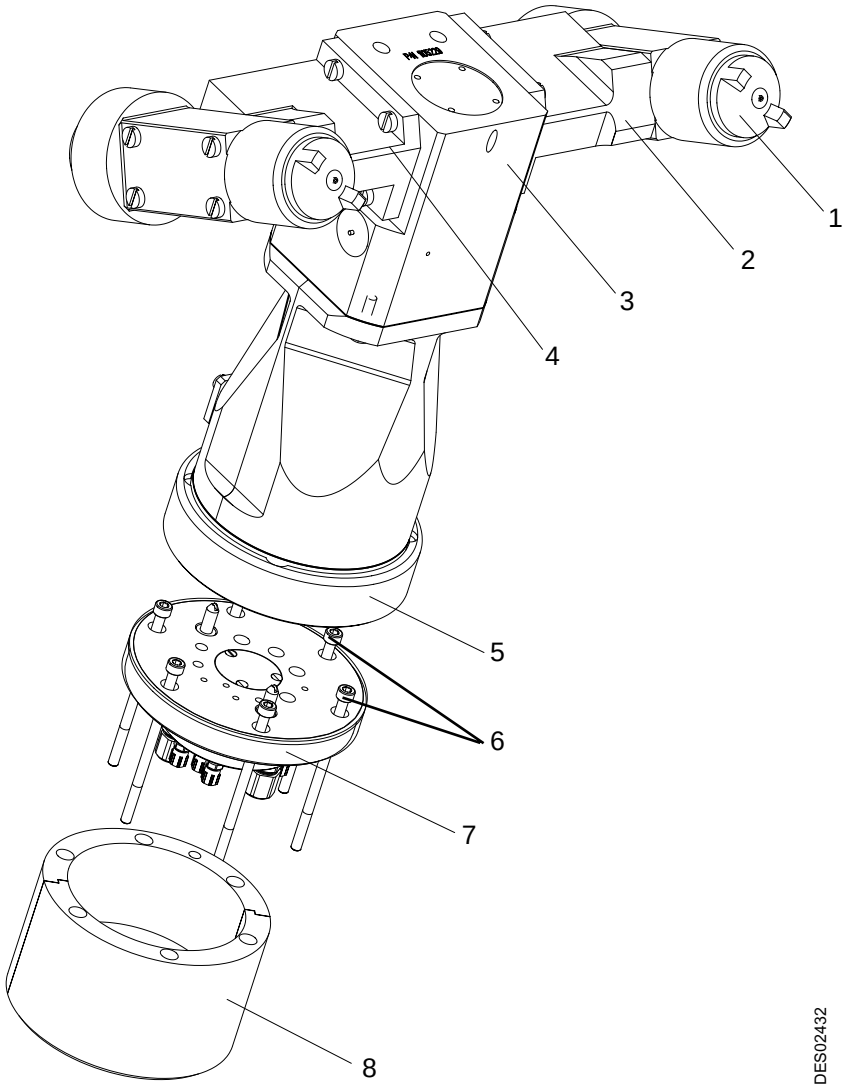
WARNING : Fan spray air caps must be replaced with clean ones every day.

8.2.2. Cleaning the TRP
see RT Nr 6009

9. Troubleshooting
see RT Nr 6009

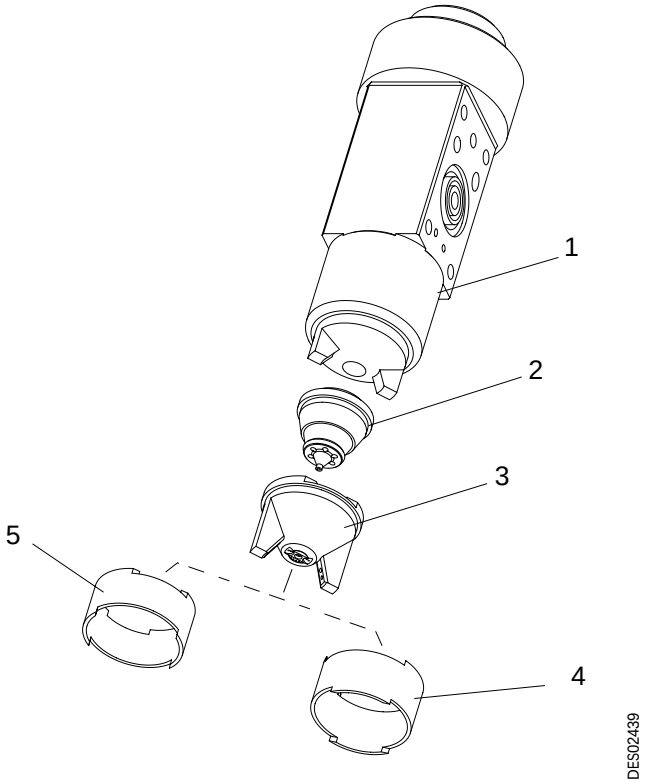
10. Spare Parts

TRP 500 assembly without high voltage - Ref.: 1523271



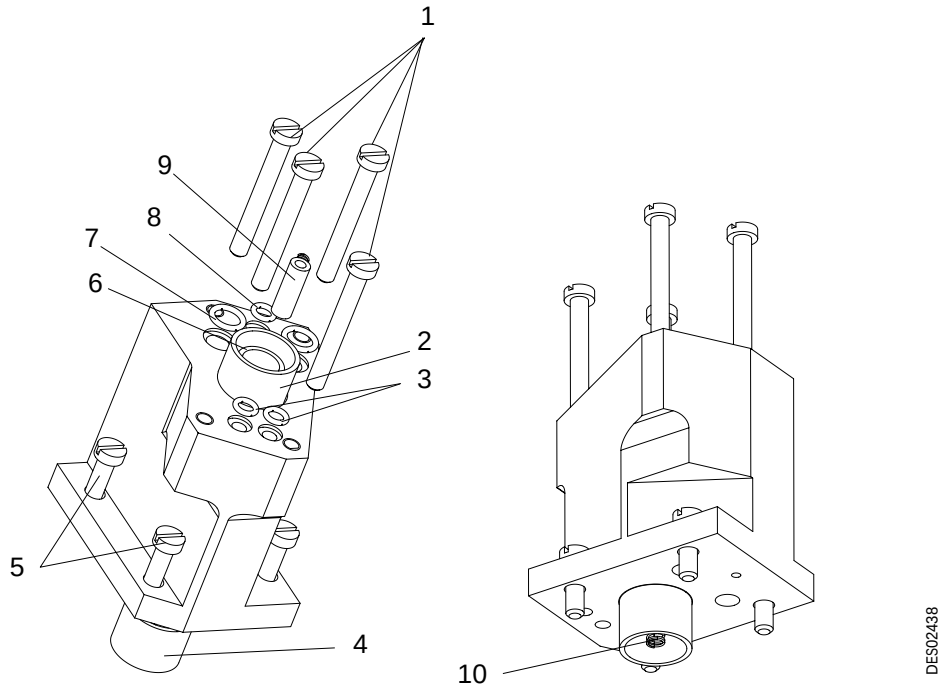
Item	P/N	Description	Qty	Unit of sale
	1523271	**TRP 500 assembly without high voltage**	**1**	**1**
1	**1523276**	**TRP 500 brass air cap and stainless steel nozzle** (see § 10.1 page 17)	**2**	**1**
2	**1523275**	**Left spacer** (see § 10.2 page 18)	**1**	**1**
3	**1523274**	**Manifold assembly** (see § 10.3 page 19)	**1**	**1**
4	**1524039**	**Right spacer** (see § 10.4 page 21)	**1**	**1**
5	**1523273**	**Removable quick-disconnect plate**(see § 10.5 page 22)	**1**	**1**
6	X4FVSY199	Screw CHc M 5 x 90 – stainless steel	6	1
7	**1523272**	**Fixed quick-disconnect plate** (see § 10.6 page 23)	**1**	**1**
8	1203950	Robot flange	1	1

10.1. TRP 500 brass air cap and stainless steel nozzle - Ref.: 1523276



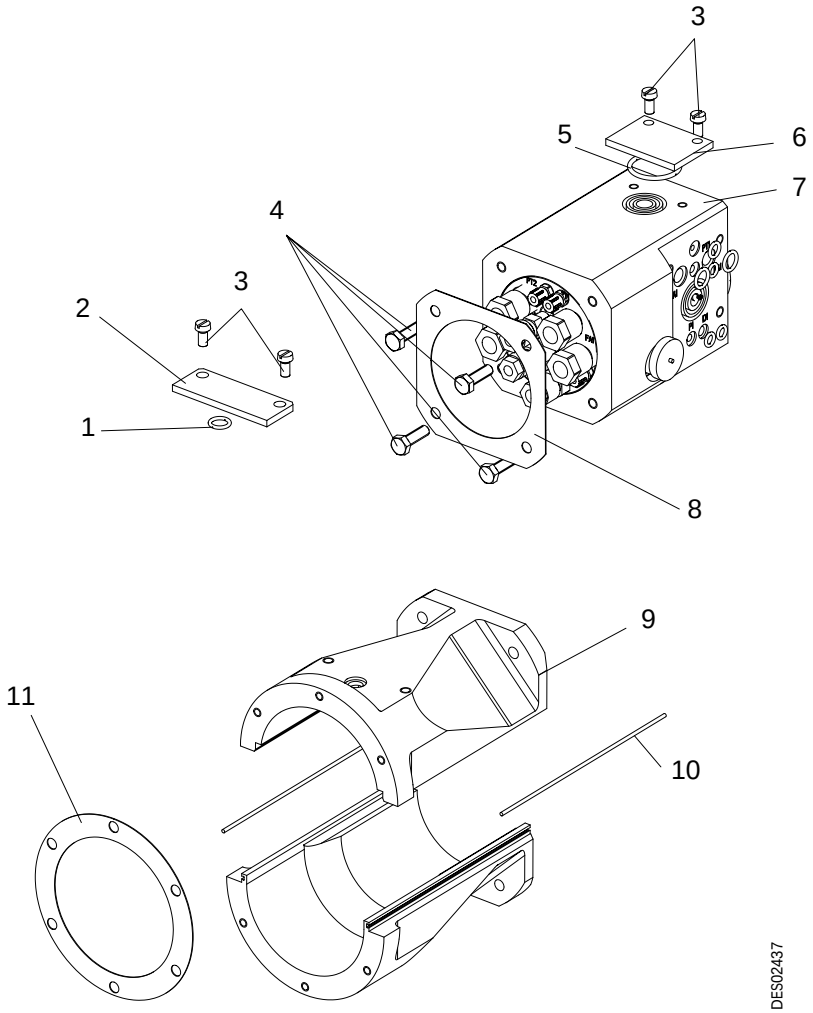
Item	P/N	Description	Qty	Unit of sale
	1523276	**TRP 500 brass air cap and stainless steel nozzle**	**1**	**1**
1	752949	Standard TRP 500 (see RT Nr 6009)	1	1
2	428374	Double circuit fan spray nozzle - stainless steel	1	1
3	428376	Fan spray air cap, profiled brass	1	1
4	731626	Spray swivel ring, 15° left	Optionnal	1
5	731627	Spray swivel ring, 15° right	1	1

10.2. Left spacer - Ref.: 1523275



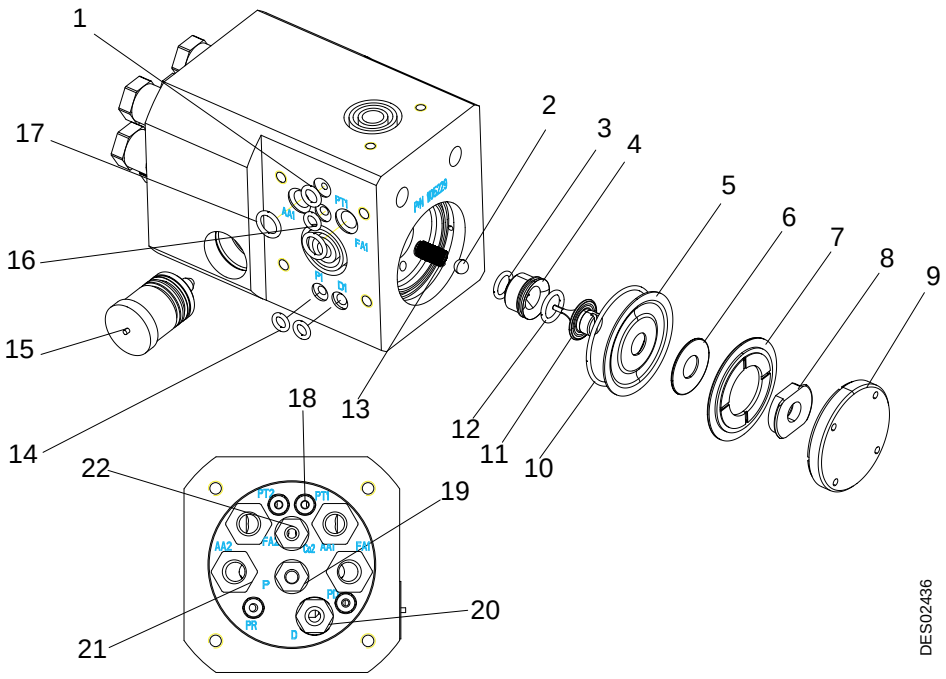
Item	P/N	Description	Qty	Unit of sale
	1523275	**Left spacer**	**1**	**1**
1	X9SVCB232	Screw, C M 6 x 50 - nylon + glass fiber	4	1
2	449707	Cylindrical spacer	2	1
3	J3STKL005	O-ring, chemically inert	2	1
4	449706	Cylindrical spacer	2	1
5	X9SVCB226	Screw, C M 6 x 20 - nylon + glass fiber	4	1
6	1313902	Left TRP spacer assembly	1	1
7	J2FTCF018	O-ring, Viton	2	2
8	J2FTDF059	O-ring, Viton	1	1
9	740532	Resistor mount	1	1
10	114411	Spring	1	5

10.3. Manifold Assembly - Ref.: 1523274



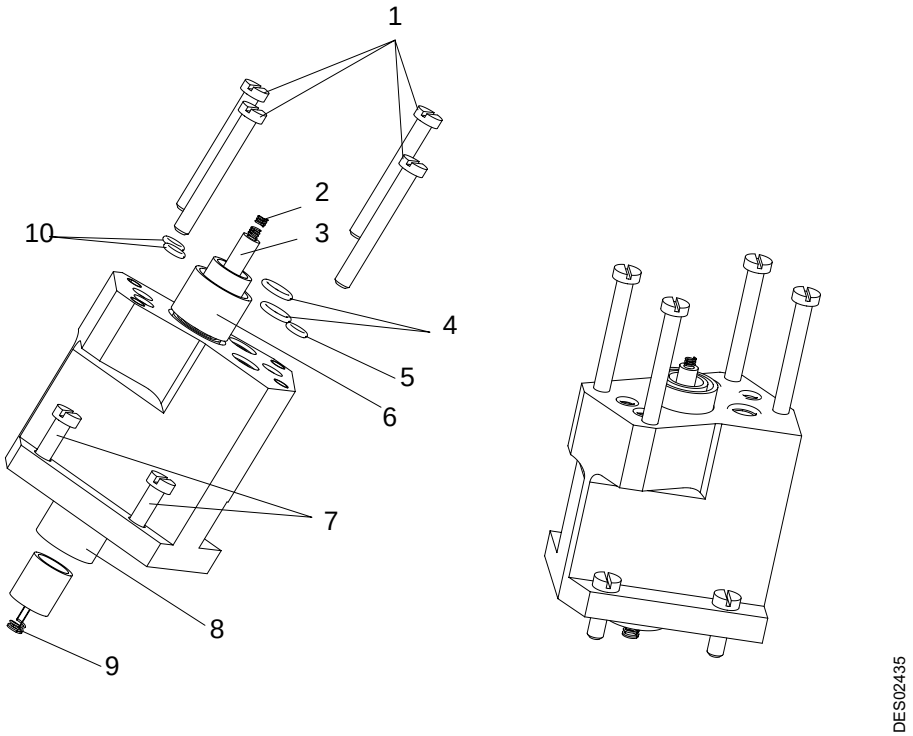
Item	P/N	Description	Qty	Unit of sale
	1523274	**Manifold assembly**	**1**	**1**
1	J2FTCF018	O-ring	1	2
2	746364	Machined plug	1	1
3	X9NVCB181	Screw, C M 5 x 10	4	1
4	X9SVHA226	Screw, H M 6 x 20 nylon filled with glass fiber	4	1
5	J3ETOR051	O-ring, EP851	2	2
6	743823	Machined plug	1	1
7	**1524038**	**TRP supply block assembly** see § 10.3.1 page 20	**1**	**1**
8	1411008	Flat seal, manifold side - PTFE	1	1
9	J2FPRS347	Cord seal, Viton	1	5
10	1202925	Sealed insulating stand	1	1
11	1407517	Flat seal, PTFE, disconnect plate side	1	1

10.3.1. TRP supply block assembly - Ref.: 1524038



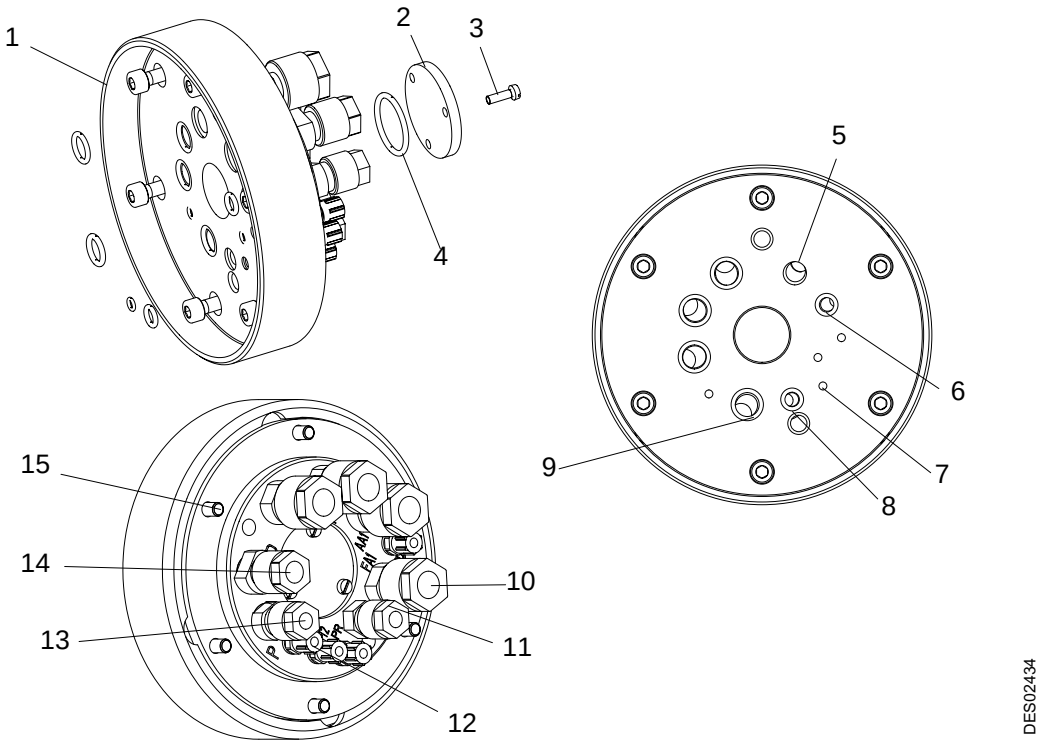
Item	P/N	Description	Qty	Unit of sale
	1524038	**TRP supply block assembly**	**1**	**1**
1	J2FTDF079	O-ring, Viton	2	1
2	K6RKBL383	Ball D:6	1	1
3	J2FTDF106	O-ring, Viton	1	1
4	1404886	Seat	1	1
5	1408616	Diaphragm	1	1
6	1404261	Flat washer	1	1
7	1404883	Air disk pilot	1	1
8	1404887	Diaphragm pusher nut	1	1
9	1404885	Regulator nut	1	1
10	J2FENV416	O-ring, Viton	1	1
11	1411420	Diaphragm pusher	1	1
12	J3TTCN007	O-ring - PTFE	1	2
13	Q2HRDC146	Regulator spring	1	1
14	J3STKL005	O-ring - chemically inert	4	1
15	**1507375**	**2-way microvalve, orange indicator seal** (see RT Nr 6021)	**1**	**1**
16	J2FTDF059	O-ring, Viton	2	1
17	J2FTCF018	O-ring, Viton	4	2
18	F6RAUR083	Straight union, M5 2.7 x 4	4	1
19	738245	Union, 1/4" for 4/6 hose	1	1
20	738187	Union 1/4-5/8	1	1
21	738244	Union 1/4-7/10	4	1
22	F6RPUK316	Union 1/8-4/6	1	1

10.4. Right spacer - Ref.: 1524039



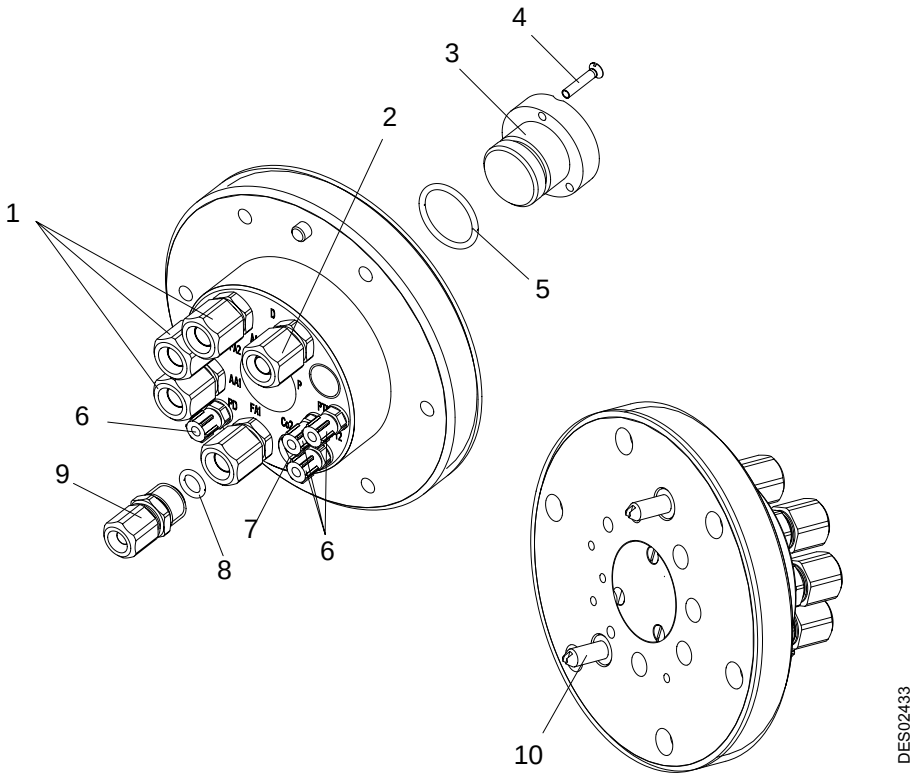
Item	P/N	Description	Qty	Unit of sale
	1524039	**Right spacer**	**1**	**1**
1	X9SVCB232	Screw, C M 6 x 50 - nylon + glass fiber	4	1
2	740532	Resistor holder	1	1
3	449706	Cylindrical spacer	2	1
4	J2FTCF018	O-ring, Viton	2	2
5	J2FTDF059	O-ring, Viton	1	1
6	1313899	Right TRP spacer assembly	1	1
7	X9SVCB226	Screw, C M 6 x 20 - nylon + glass fiber	4	1
8	449707	Cylindrical spacer	2	1
9	114411	Spring	1	5
10	J3STKL005	O-ring, chemically inert	2	1

10.5. Removable Quick-Disconnect Plate - Ref.: 1523273



Item	P/N	Description	Qty	Unit of sale
	1523273	**Removable quick-disconnect plate**	**1**	**1**
1	744633	Nut, stainless steel	1	1
2	747047	Insulating stand washer	1	1
3	X2BVCB067	Screw C M 3 x 20 - zinc-plated steel	3	1
4	J2CTCN042	O-ring	1	5
5	J3STKL980	O-ring, chemically inert	1	1
6	J3STKL005	O-ring, chemically inert	1	1
7	J2CTPB027	O-ring - PB 701	4	1
8	J2FTDF059	O-ring, Viton	1	1
9	J2FTDF106	O-ring, Viton	4	1
10	738244	Union, 1/4" for 7/10 hose	4	1
11	F6RPUK316	Male union	1	1
12	F6RAUR083	Straight union, M5 2.7 x 4	4	1
13	738245	Union, 1/4" for 4/6 hose	1	1
14	738187	Union, 1/4" for 5/8 hose	1	1
15	X3AVSY183	Screw CHc M 5 x 16 - zinc-plated steel	6	1

10.6. Fixed Quick-Disconnect Plate - Ref.: 1523272



Item	P/N	Description	Qty	Unit of sale
	1523272	**Fixed quick-disconnect plate**	**1**	**1**
1	1313846	Rack union, 1/4", Dia. 8/10	4	1
2	1314378	Rack union, 1/4", Dia. 7/10	1	1
3	1402765	Plug for quick-disconnect plate socket	1	1
4	X4FVKF048	Screw, F/90 M 2.5 x 16 - stainless steel	3	1
5	J2CTCN042	O-ring	1	5
6	F6RAUR083	Straight union, M5 2.7 x 4	4	1
7	F6RLBH004	Plug, 1/4"	1	1
8	J3TTCN006	O-ring, PTFE	5	2
9	1313847	Rack union, 1/4", Dia. 5/8	1	1
10	1405762	Centring pin	1	1