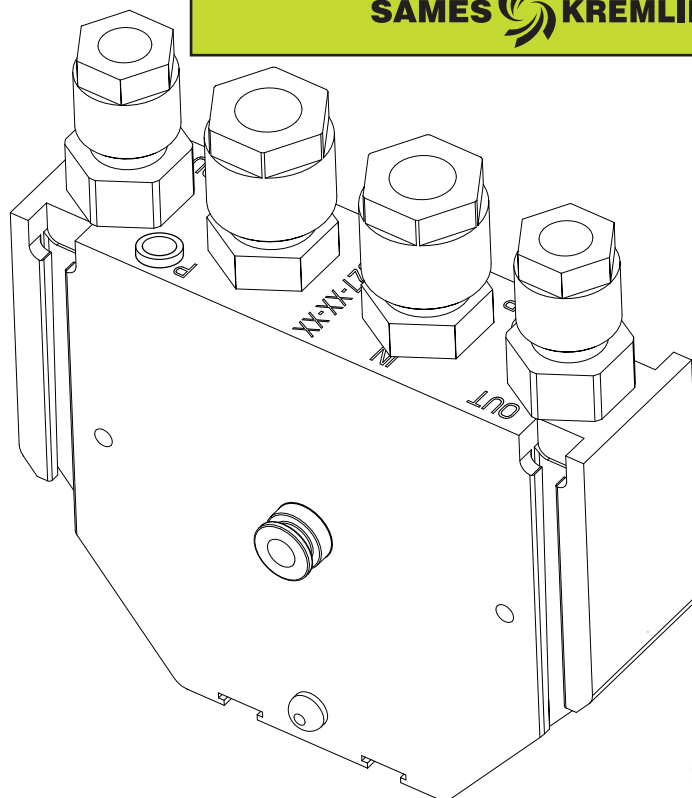




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DES02029

User manual

Machined Moduclean (with or without recirculation) and accessories

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Machined Moduclean (with or without recirculation) and accessories

1. Description - - - - -	4
1.1. <i>Types of Moduclean</i>	4
1.2. <i>Characteristics</i>	4
1.3. <i>Description of the assembly</i>	4
1.4. <i>Description of a Moduclean block</i>	5
2. Operation - - - - -	5
2.1. <i>Option with flow meter outlet base plate</i>	6
2.2. <i>Option with regulator - flowmeter base plate with vertical connector</i>	6
2.3. <i>Option with regulator - flowmeter base plate with horizontal connector</i>	6
3. Maintenance-Cleaning- - - - -	7
4. Disassembly-Reassembly - - - - -	8
4.1. <i>Disassembly</i>	8
4.2. <i>Reassembly</i>	8
4.3. <i>Disassembling and reassembling a microvalve</i>	8
5. Microvalve - - - - -	9
6. Spare parts- - - - -	9
6.1. <i>Tools</i>	10
6.2. <i>Flow meter adaptation</i>	10
6.3. <i>Regulator mounting plate</i>	11
6.4. <i>Regulator</i>	12
6.5. <i>Unions (for information)</i>	13

1. Description

The MODUCLEAN is a compact, modular color-changing block. It is designed to hold N elements between two bars. An O ring is used to seal the product passage.

Each element is fitted with two microvalves for rapidly selecting one of two circuits (paint or air/solvent). Modules can be added or removed from the block as required.

1.1. Types of Moduclean

There are two models of MODUCLEAN defined according to the type of paint.

- MODUCLEAN with recirculation
- MODUCLEAN without recirculation

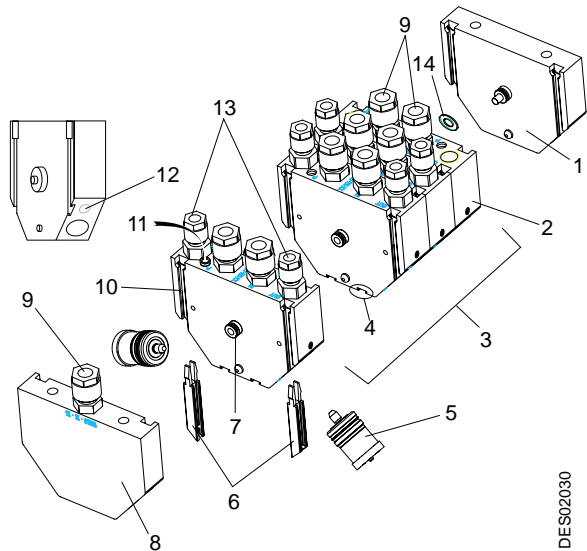
This system guarantees continuous circulation of the product while the microvalve is closed, preventing stagnation in the hoses.

1.2. Characteristics

Control	Filtered, dehumidified, oil-free air.
Control pressure	5 to 8 bar
Response time	50 ms with 0.5 m of 2.7x4 mm pipe
Response time	300 ms with 15 m of 2.7x4 mm pipe
Counter-pressure	40 bar maximum
Supply pressure	10 bar maximum
Viscosity range	40" AFNOR cup 4 maxi.
Fitted weight	250 g
Dimensions	see § 1.4 page 5
Manufacture materials	White Delrin

The color changers are located as close as possible to the sprayer in order to minimize product losses and optimize the color-changing time.

1.3. Description of the assembly



1	Closing element
2	MODUCLEAN without air and solvent recirculation
3	N MODUCLEAN with or without recirculation 2 colors
4	2 housings are designed for labeling.
5	Microvalve (2 per element)
6	Securing bar (2 per element)
7	O ring between each element
8	End element
9	Union for element with or without recirculation (2)
10	Slid bar housing.
11	Quick-release air supply union, dia. 4 mm
12	Insulating needle (2 per element)
13	Union for element with recirculation only (4)
14	Teflon washer

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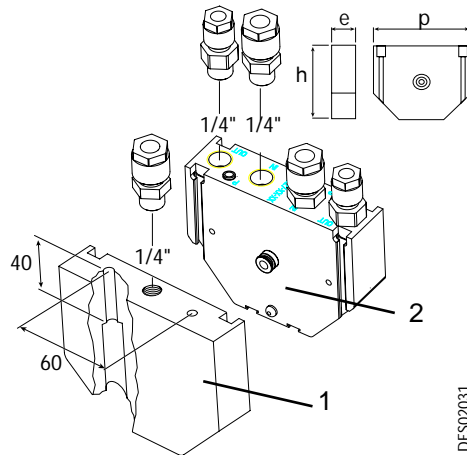
NOTE: The MODUCLEAN block assembly is secured at its ends by 4 screws.

1.4. Description of a Moduclean block

Item	Description	p	h	e
1	End element	104	80	20
2	Moduclean	104	80	28

Note: The unions shown in this manual are not included among the spare parts of the Moduclean.

[see § 6.5 page 13.](#)

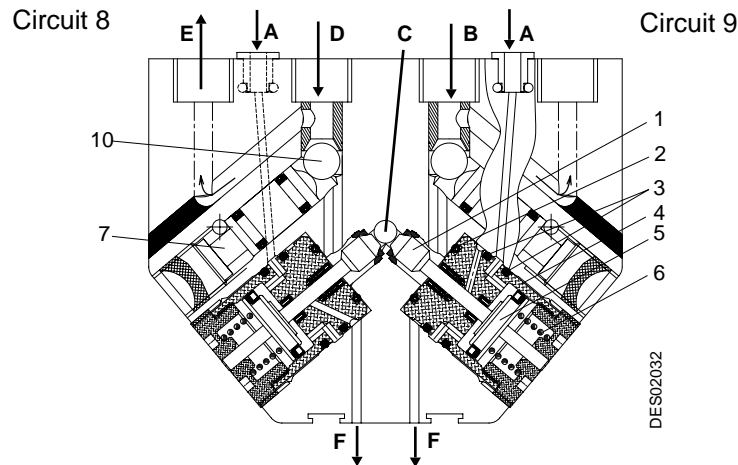


2. Operation

Microvalves are used to select the product in a MODUCLEAN block. Only one microvalve of the block is in OPEN position.

A solenoid valve is used to control opening and closing of the microvalve.

Each time a color is changed, a rinsing cycle (air, solvent) must be carried out using the same procedure.



When not in use, the microvalves are closed [circuit 8]. The product arriving at (D) cannot flow through opening (C), but continues to flow towards (E) (for an element with recirculation).

When the the microvalve (4) control air (A) is pressurized [circuit 9], the piston (6) compresses the spring (5) and the product can flow from (B) to (C).

O rings (2) and (3) are used to seal the body of the microvalve (4) from the air and the product.

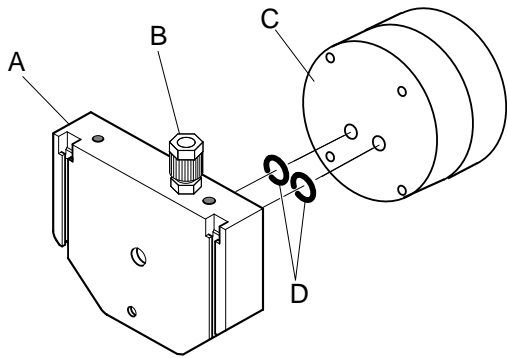
Holes (F) are provided for detecting leaks.

The function of the insulating needle (7) is to:

- 1 stop the arrival of the product so that a microvalve leak can be remedied without cutting the circulating supply,
- 2 prevent any paint surges (by acting as a check valve).

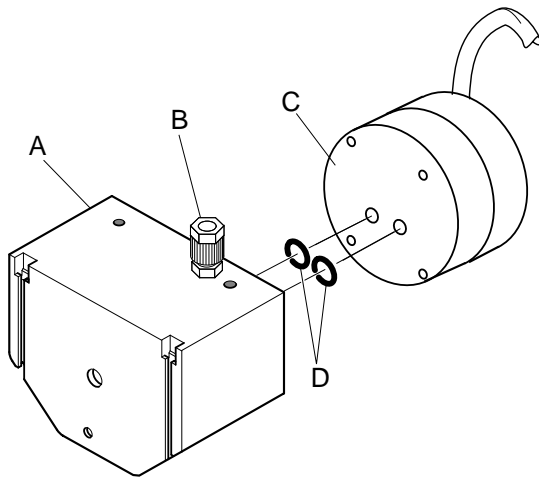
Note: The number of distributor elements is determined by the number of different products. For example: 10 different colors require 1 module without recirculation (air, solvent) and 5 modules with recirculation (paint).

2.1. Option with flow meter outlet base plate



A	Adapter
B	Product outlet
C	Flowmeter
D	O rings

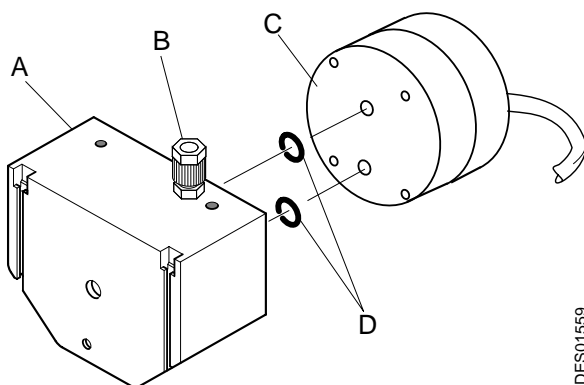
2.2. Option with regulator - flowmeter base plate with vertical connector



A	Adapter
B	Product outlet
C	Flowmeter
D	O rings

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2.3. Option with regulator - flowmeter base plate with horizontal connector



A	Adapter
B	Product outlet
C	Flowmeter
D	O rings

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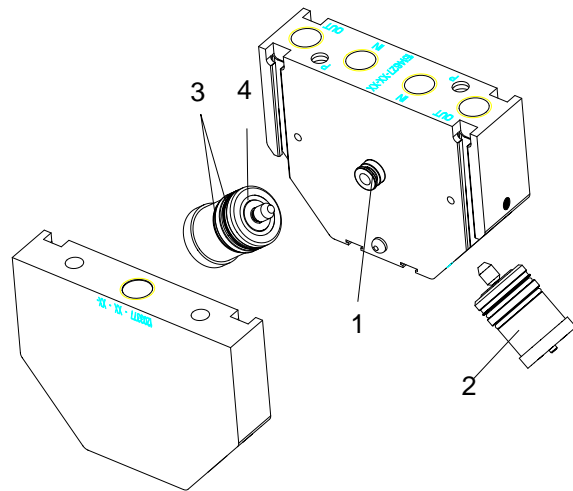
3. Maintenance-Cleaning

Maintenance is limited to changing the seal (1) and replacing the microvalve (2) or its external seals (3) and (4).

Carry out a period check for leaks:

- Between each element of the block
- At the leak detection hole
(see § 2 page 5).
- At the microvalve: thread, indicator.
- At the moduclean insulating needle.
(see § 2 page 5)

If there is a leak, repair it immediately. Otherwise, operating faults will quickly appear.



DES02033



WARNING : Do not soak plastic parts for long periods in aggressive solvents. Do not soak in acids or phenol.

Never soak seals in solvents. Any deformed or expanded seal must be changed immediately. Never use sharp instruments for cleaning.

4. Disassembly-Reassembly

The following tools [see § 6.1 page 10](#) are required for this operation:

- 1303689 microvalve disassembly tool
- 739483 needle tightening/loosening tool
- Flat screwdriver, dia. 3 x 125.

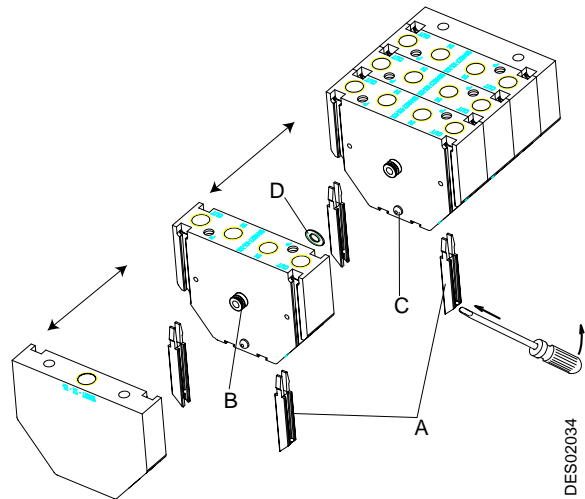
4.1. Disassembly

- Close all circuits before any operation.
- Disconnect the paint and air supplies to the element concerned.
- Place the end of the screwdriver on the notch (A) of the bar and lever it out.
- Repeat this operation on all the bars securing the faulty element.
- To split the block, push along its axis.
- Repeat this action to remove the faulty element.

4.2. Reassembly

Carry out the operations above in reverse order, taking care to:

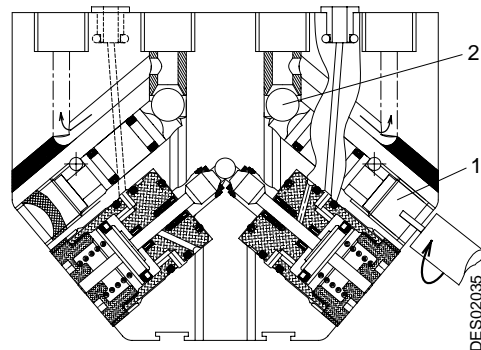
- Grease the seal with vaseline (B),
- Position the pin (C) opposite its housing,
- Replace the union if it has been damaged.
- Check that the Teflon washer is in its housing.



4.3. Disassembling and reassembling a microvalve

Microvalves can be replaced rapidly without cutting off the circulation. Before disassembling, the microvalve must be isolated in the following manner:

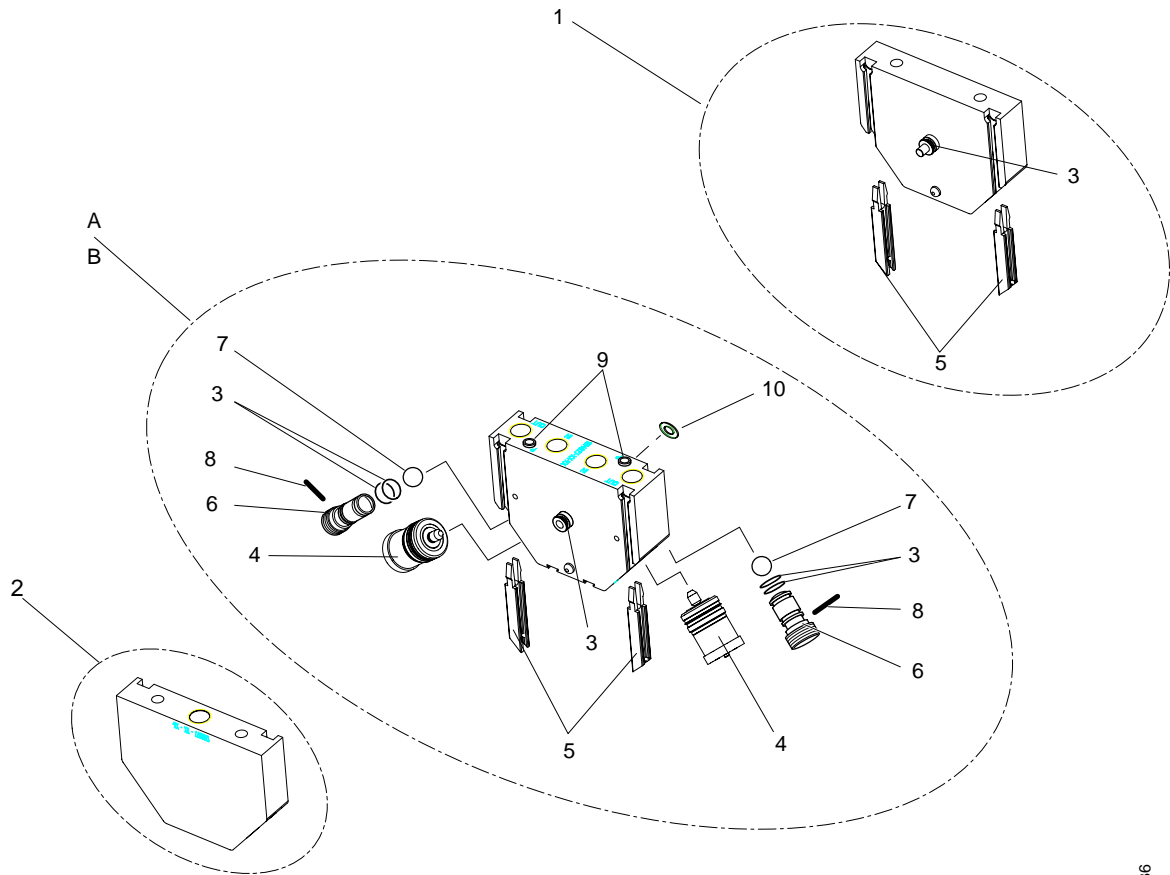
- Use tool ref. 739483 to screw the needle by one turn.
- Unscrew the microvalve by 1/4 of a turn using tool ref. 1303689 in order to release any internal overpressure.
- Turn the spool screw (1) gently until it comes into contact with the ball (2).
- Unscrew the microvalve by 4 turns to disengage the thread.



5. Microvalve

See manual [see RT Nr 6021](#).

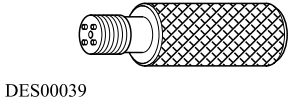
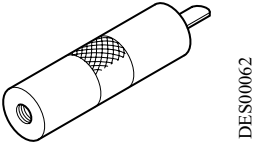
6. Spare parts



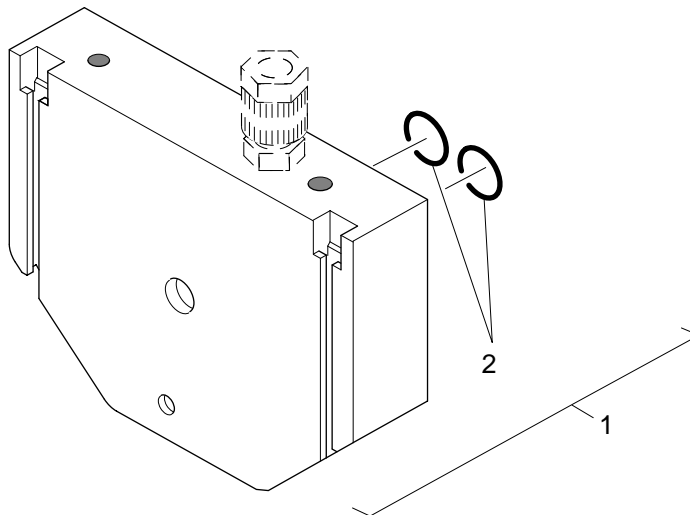
DES02036

Item	Part number	Description	Qty	Unit of sale
A	1514627	MODUCLEAN with recirculation 1/4" BSP	1	1
B	1514628	MODUCLEAN without recirculation 1/4" BSP	1	1
1	1519870	Inlet element	1	1
2	1519871	Outlet element	1	1
3	J3STKL082	O ring - chemically inert	5	1
4	1507375	Microvalve equipped with o-rings - chemically inert	2	1
5	738267	Securing bar	2	2
6	1404486	Insulating needle	2	1
7	K6RKBL314	Ball	2	1
8	549670	Stop pin	2	10
9	F6RXZG081	Union + seal	2	1
10	1411122	Teflon washer	1	1

6.1. Tools

Part number		Description	Qty	Unit of sale
1303689		Microvalve manual disassembly tool (4-pin)	1	1
739483		Needle tightening/loosening tool	1	1

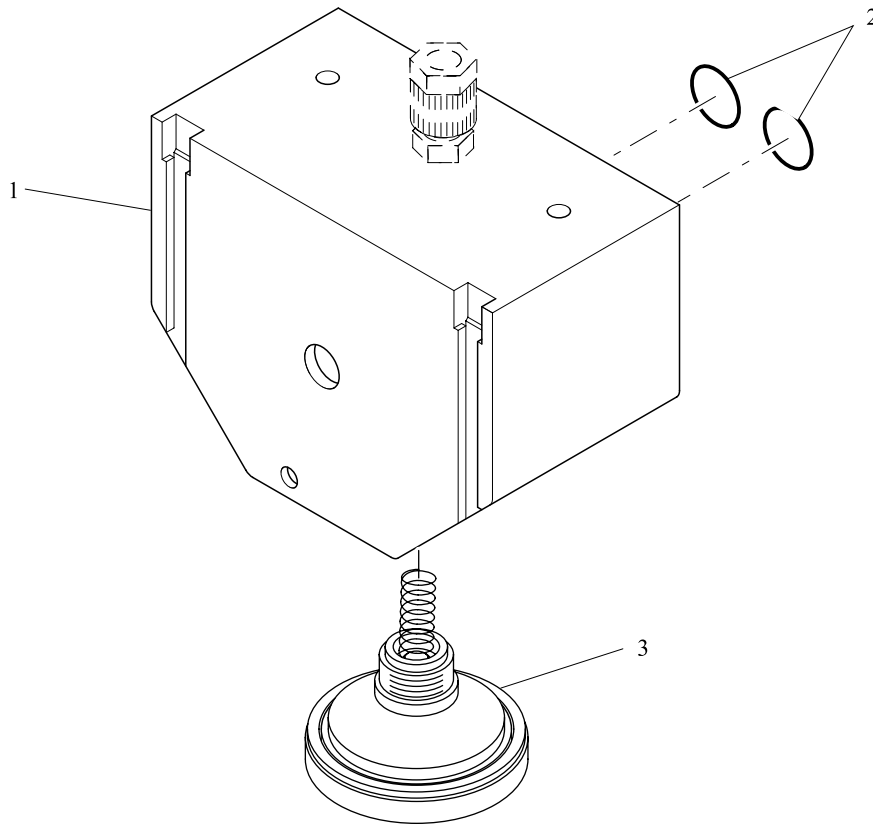
6.2. Flow meter adaptation



DES00064

Item	Part number	Description	Qty	Unit of sale
1	856040	Flowmeter adaptation	1	1
2	J3TTCN006	O ring	2	2

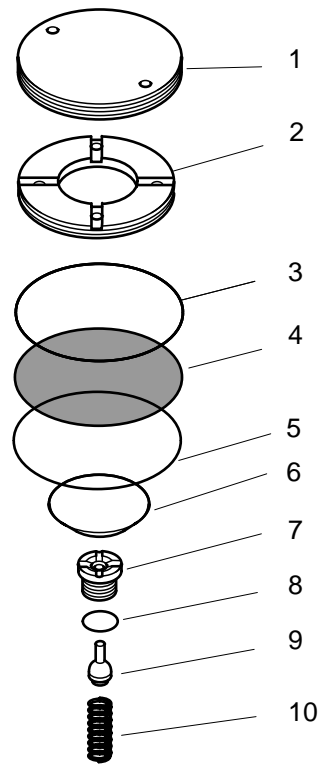
6.3. Regulator mounting plate



DES00498

Item	Part number	Description	Qty	Unit of sale
1	1501300	Regulator - flowmeter base plate with horizontal connector	1	1
	1506882	Regulator - flowmeter base plate with vertical connector	1	1
2	J3TTCN006	O-ring	2	2
3	-	Regulator see § 6.4 page 12	1	-

6.4. Regulator



DES01345

Item	Part number	Description	Qty	Unit of sale
1	543894	Regulator cover	1	1
2	543891	Air pilot disk	1	1
3	J2FTDF416	O-ring	1	1
4	543893	Regulator diaphragm	1	5
5	J2FTDF410	O-ring	1	1
6	543892	Diaphragm pusher, dia. 38	1	1
7	742761	Regulator seat	1	1
8	J3TTCN007	O-ring	1	2
9	740511	Regulator needle	1	1
10	742759	Regulator spring	1	1

6.5. Unions (for information)

Unions are generally used. There are two diameters according to the required paint flow rate. For MODUCLEAN with recirculation, the inlet and recirculation unions always have the same diameter.

	Part number	Description	Qty	Unit of sale
	F6RPUK320	Union 1/4" x dia. 6X8	4	1
or	F6RPUK322	Union 1/4" x dia. 8X10	4	1
	F6RPUK320	Union 1/4" x dia. 6X8, paint outlet, see note	1	1

Note: The outlet union must be adjusted according to the paint pressure, hose length and required flow rate of the setup. The product code is given as a guide only.