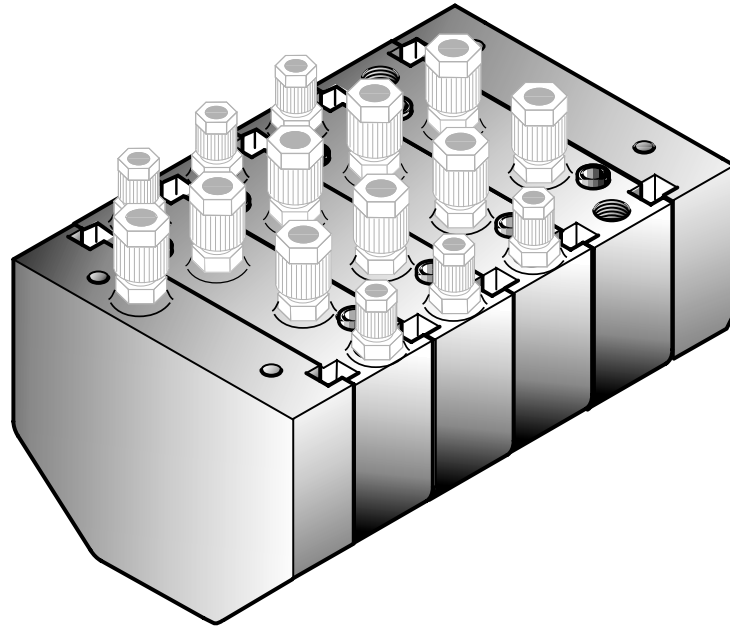




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DES02136

# User manual

## **Moduflow (with and without re circulation), and accessories**

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Moduflow  
(with and without re circulation),  
and accessories

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## 1. Description

The MODUFLOW is a compact, modular colour-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 micro valves 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 Moduflow

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

- MODUFLOW with re circulation
- MODUFLOW without re circulation

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

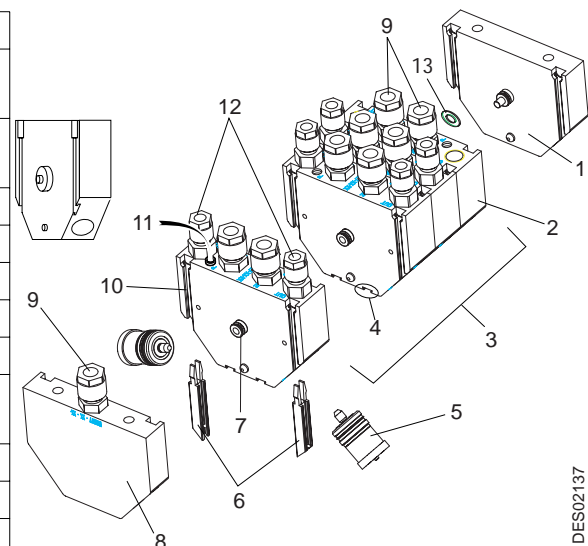
### 1.2. Characteristics

Control	Filtered, dehumidified, oil-free air.
Control pressure	5 to 8 bar
Response time between the power on of the solenoid valve and the micro valve opening.	50 ms with 0.5 m of 2.7x4 mm rilsan hose
	300 ms with 15 m of 2.7x4 mm rilsan hose
Counter-pressure	40 bar maximum
Supply pressure	10 bar maximum
Viscosity range	40" AFNOR cup 4 maxi. Contact Sames Technologies for higher viscosities
Fitted weight	250 g
Dimensions	<a href="#">see § 1.4 page 5</a>
Manufacture materials	Pom C blanc

The colour changing blocks are located as close as possible to the atomizer in order to minimize product losses and optimize the colour-changing time.

### 1.3. Description of the assembly

1	Closing element
2	MODUFLOW without air and solvent re circulation
3	N MODUFLOW with or without colour re circulation
4	2 housings are designed for labelling.
5	Micro valve (2 per element)
6	SLID bar (2 per element)
7	O ring between each element
8	End element
9	Union for element with or without re circulation (2)
10	Slid bar housing.
11	Quick-release air supply union, dia. 4 mm
12	Union for element with re circulation only (4)
13	Teflon washer



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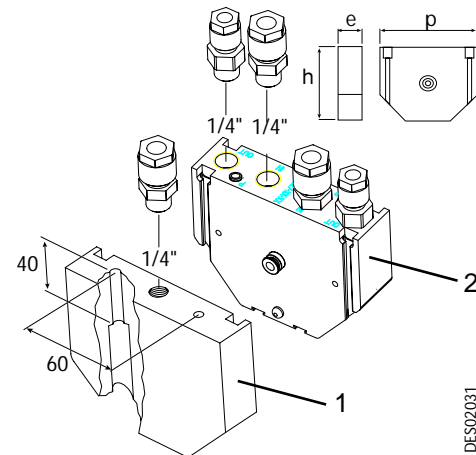
**NOTE: The MODUCLEAN block assembly is secured at its ends by 4 screws.**

## 1.4. Description of a Moduflow block

Item	Description	p	h	e
1	End element	104	80	20
2	Moduflow	104	80	28
	Flowmeter adaptation	104	80	25

**Note:** The unions shown in this manual are not included among the spare parts of the Moduflow. see § 8.2 page 11.

Rep.	Connection	Marking
1	Union, product inlet	IN
2	Union, product outlet	OUT
3	Micro valve pilot	P

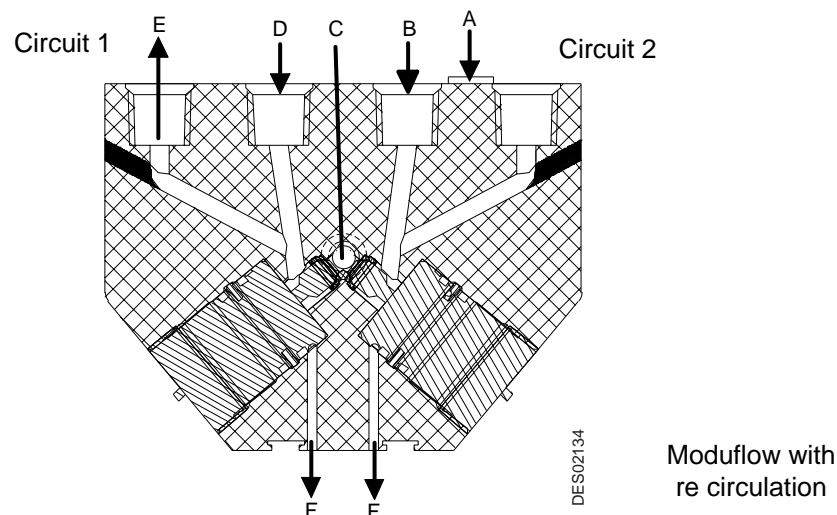


## 2. Operating

Micro valves are used to select the product in a MODUFLOW 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 colour is changed, a rinsing cycle (air, solvent) must be carried out using the same procedure.



When not in use, the microvalves are closed [circuit 1]. The product arriving at (D) cannot flow through opening (C), but continues to flow towards (E) (for an element with re circulation).

When the microvalve control air (A) is pressurized [circuit 2], the micro valve piston compresses the spring and the product can flow from (B) to (C).

Outer o-rings are used to seal the body of the microvalve from the air and the product.

Holes (F) are provided for detecting leaks.

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

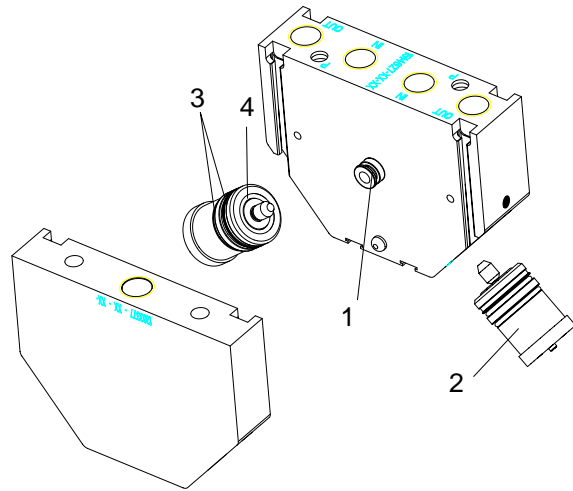
### 3. Maintenance - Cleaning

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.

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



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**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 § 7 page 9](#) are required for this operation:

- 1303689 microvalve disassembly tool
- Flat screwdriver, dia. 3 x 125. for the slid bars disassembly.

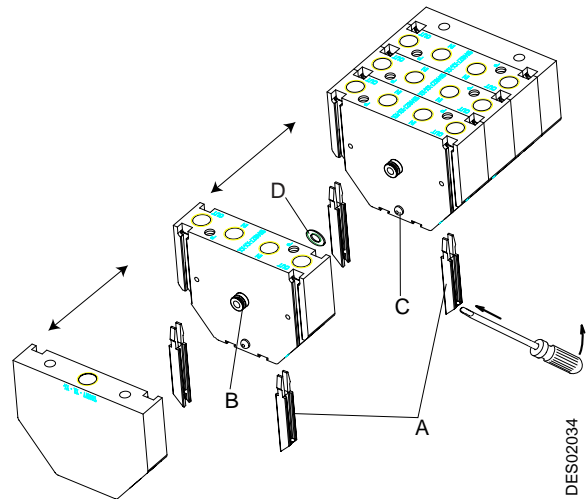
### 4.1. Disassembly

- 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 slid 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:

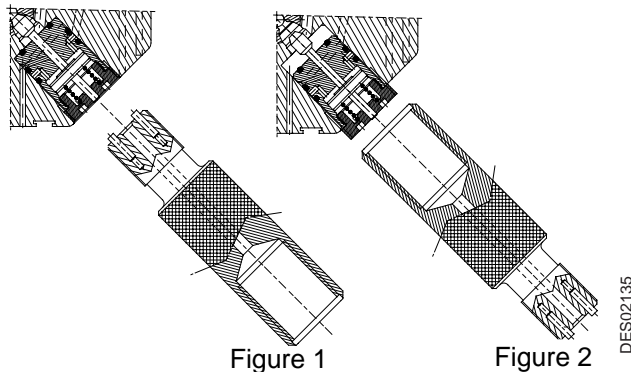
- Grease the seal with vaseline (B),
- Position the pin (C) opposite its housing,
- Replace the union if it has been damaged.
- Check that the teflon washer (D) is in its housing.



### 4.3. Disassembling and reassembling a microvalve

#### 4.3.1. Disassembling

Micro valves can be replaced with cutting off the product supply and emptying the hoses.



- Unscrew the microvalve by 4 turns to disengage the thread (see figure 1).

**If its cap was to be detached, while the microvalve remained struck in its housing, remove the latter according to the procedure given in the note before.**

- Reverse the disassembly tool.
- Screw the tool onto the microvalve (see figure 2).
- Completely remove the microvalve by pulling it out.

**Note:**

- Turn the dismantling tool around
- Remove spring from the microvalve.
- Screw the tool fully into the microvalve body.
- Remove the microvalve by applying a turning movement.

#### 4.3.2. Reassembling



**CAUTION :** Before reassembly, change the microvalve o-rings [see RT Nr 6021](#)

- Clean the microvalve's seating with solvent.
- Dry the seating, ensure it is clean and no impurities have been left.
- With compressed air, blow the driving lines, because when dismantling the microvalve, the product can have entered the driving lines.
- Smear with vaseline, the micro valve body ([see RT Nr 6021](#)).
- Install the microvalve applying a turning movement (to avoid any deterioration of the o-rings).
- Screw home and tighten the microvalve with the automatic tool P/N # 1403478, screwing torque 2,5N.m (1.8 Ft.Lb).



## 5. Micro valve

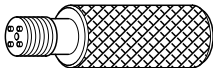
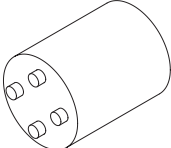
See user manual of micro valve [see RT Nr 6021](#).

## 6. Troubleshooting

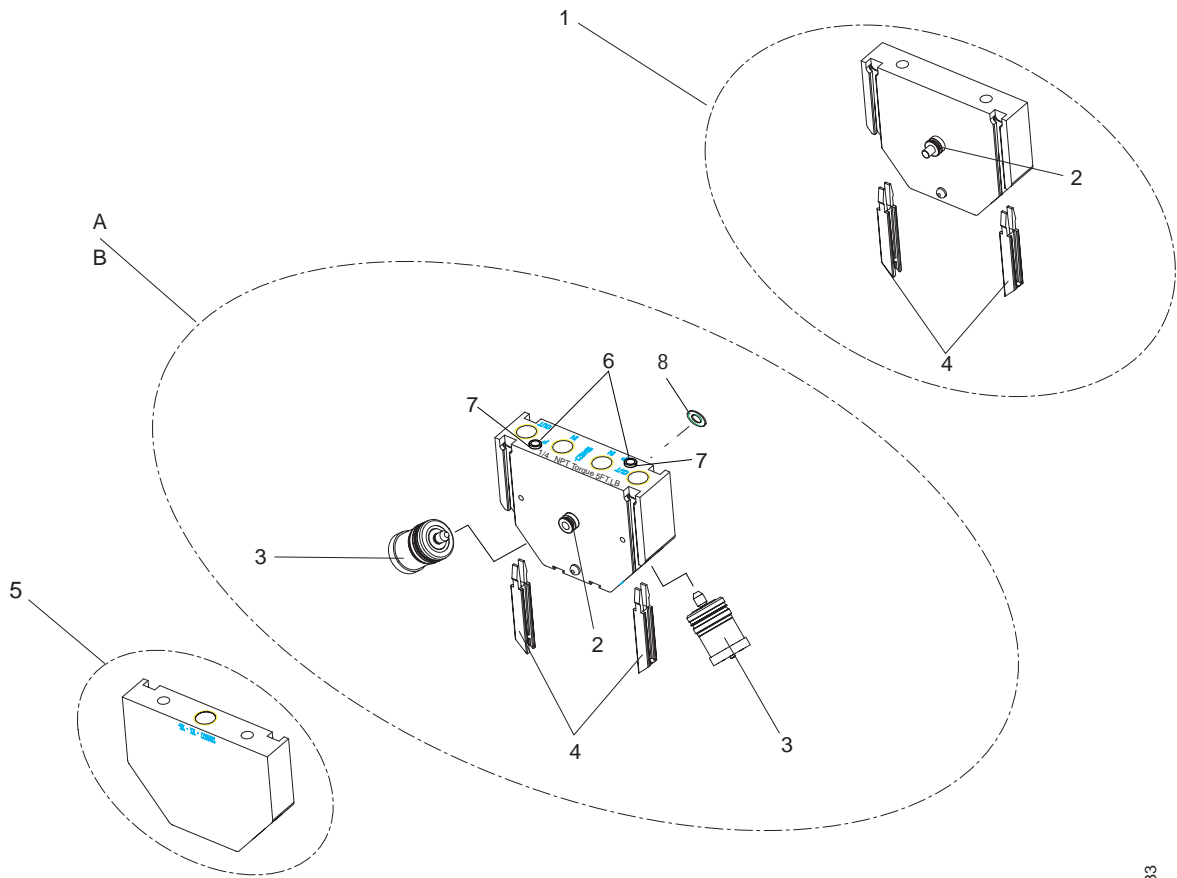
Symptoms	Possible causes	Solutions
Elements are not tight among themselves.	The «product transfer» o-ring is defective	- Remove the defective element and replace the o-ring.
An element is leaking at the base through the leak detection hole.	A micro valve is no longer tight.	- Remove the microvalve (at the leaky side) and replace all external rings <a href="#">see RT Nr 6021</a> .
Paint is backing up through the micro valve cover.	An external ring is damaged	- Remove the microvalve and replace all external o-rings. <a href="#">see RT Nr 6021</a> .

For the micro valve troubleshooting, [see RT Nr 6021](#).

## 7. Tool

Part number		Description	Qty	Sale unit
1303689	 DES00039	Microvalve manual disassembly tool	1	1
1403478	 DES01673	Microvalve torque tool	1	1

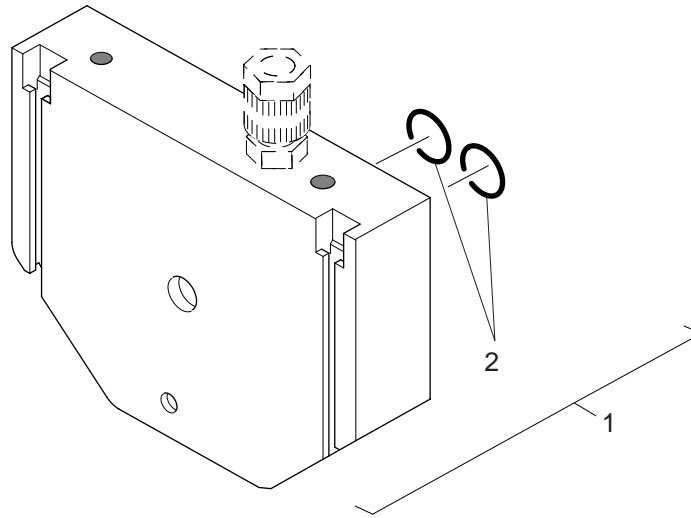
## 8. Spare parts



DES02133

Item	Part number	Description	Qty	Sale unit
<b>A</b>	<b>910005854</b>	<b>MODUFLOW with re circulation equipped with 2 microvalves (orange indicator)</b>	<b>1</b>	<b>1</b>
<b>B</b>	<b>1525568</b>	<b>MODUFLOW without re circulation with with 2 microvalves (orange indicator)</b>	<b>1</b>	<b>1</b>
1	1519870	Closing element	1	1
2	J3STKL082	O-ring - chemically inert	1	1
<b>3</b>	<b>1507375</b>	<b>Micro valve equipped with chemically inert rings, orange indicator</b>	<b>2</b>	<b>1</b>
4	738267	Slide bar	2	2
5	1519871	End element	1	1
6	F6RXZG081	Union	2	1
7	J3STKL034	O-ring - chemically inert	2	1
8	1411122	Teflon washer	1	1

## 8.1. Flowmeter adaptation



DES00064

Item	Part number	Description	Qty	Sale unit
1	856035	Flowmeter adaptation	1	1
2	J3TTCN006	O-ring	2	2

## 8.2. Unions (for information)

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

	Part number	Description	Qty	Sale unit
	F6RPUK320	Union 1/4 "x Ø 6X8	4	1
or	F6RPUK322	Union 1/4 "x Ø 8X10	4	1
	F6RPUK320	Union 1/4 "x Ø 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.