MOUVEX®
Part of Pump Solutions Group
A DOVER COMPANY

INSTRUCTIONS 1138 e

Section	
Effective	January 2013
Replaces	1138

Translation of the original instructions

DMX 3 - DMX 3 MF

INSTALLATION

OPERATION

MAINTENANCE

PSG
PUMP SOLUTIONS GROUP
A DOVER COMPANY

Z.I. La Plaine des Isles - F 89000 AUXERRE - FRANCE
Tel. : +33 (0)3.86.49.86.30 - Fax : +33 (0)3.86.49.87.17
contact@mouvex.com - www.mouvex.com

Your distributor :

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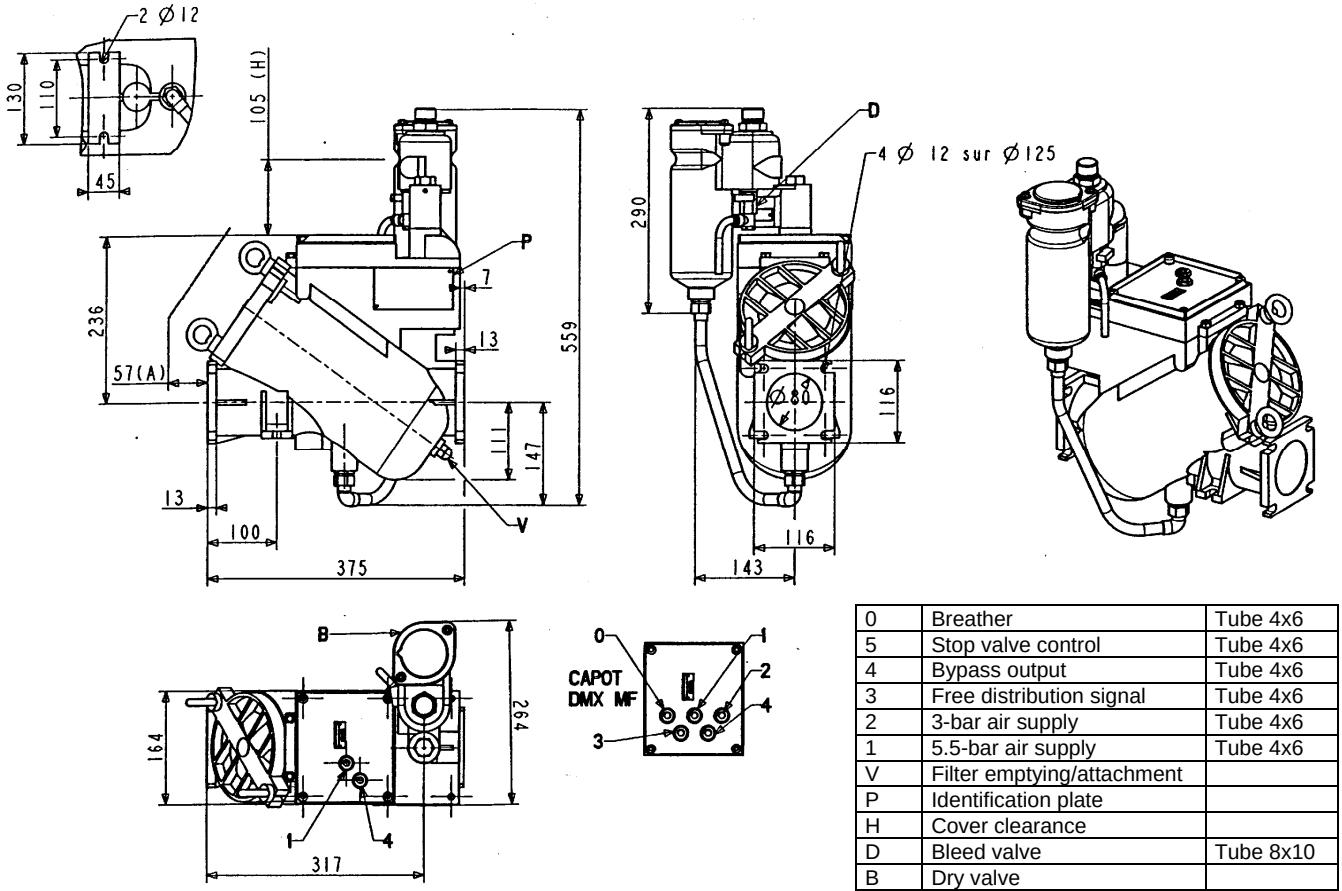
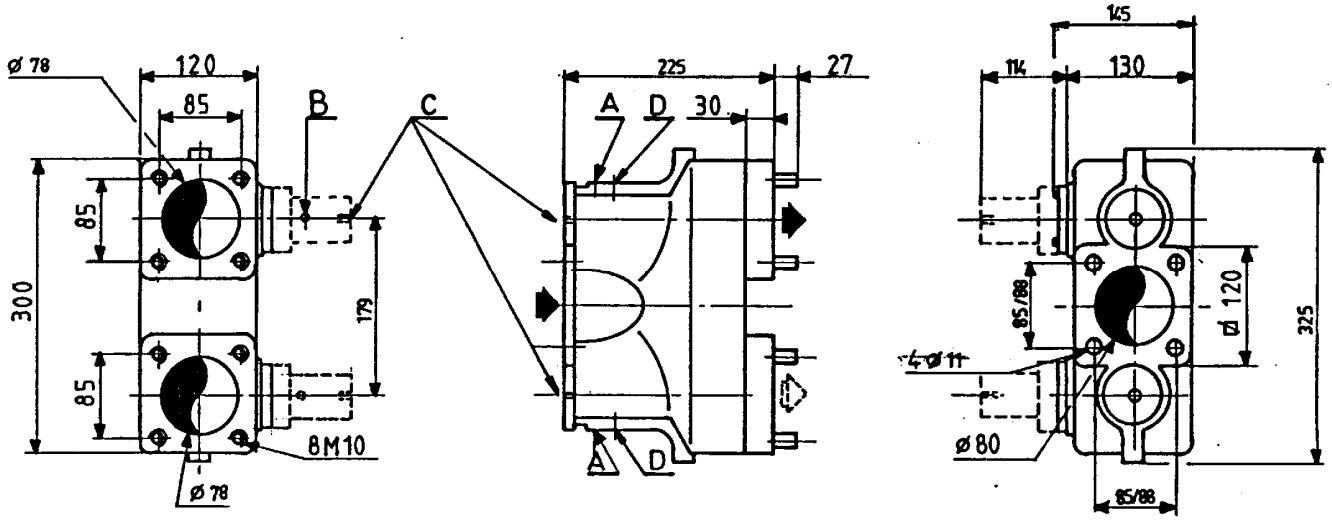


0	Breather	Tube 4x6
5	Stop valve control	Tube 4x6
4	Bypass output	Tube 4x6
3	Free distribution signal	Tube 4x6
2	3-bar air supply	Tube 4x6
1	5.5-bar air supply	Tube 4x6
V	Filter emptying/attachment	
P	Identification plate	
H	Cover clearance	
D	Bleed valve	Tube 8x10
B	Dry valve	
A	Basket clearance	

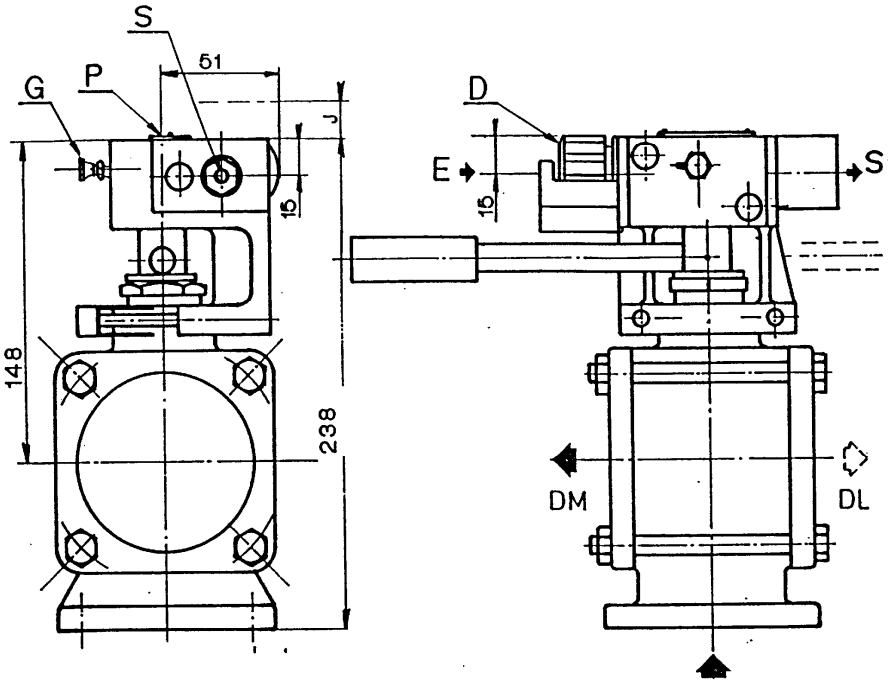
A	Compressed air supply port	G 1/4
B	Predetermination variant	G 1/8
C	Breather (connected to hose ∅ 4x6 minimum, directed downwards)	G 1/8 M5
D	Drip strip	

COMPENSATED SELECTIVE VALVE



Note: Make sure to direct pneumatic supply port B of the predetermination valve towards the selective valve product output side.

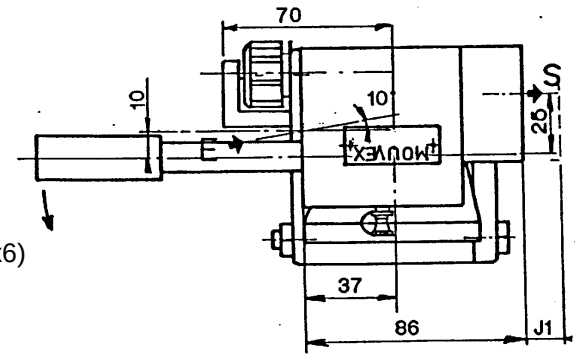
OVERALL DIMENSIONS DMX 3 MF - mm

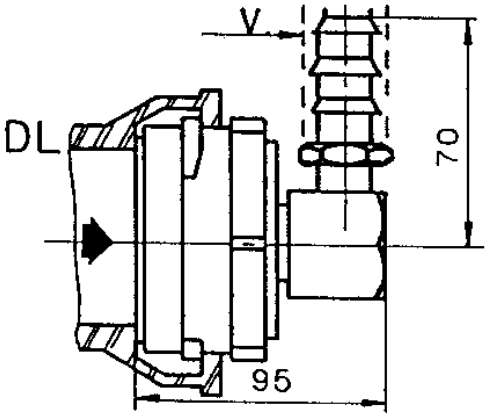


IMPORTANT
The directions DM and DL must be adhered to.
To ensure correct draining, never have the outlet DL pointing upward

D Valve exhaust plug
E Compressed air inlet orifice = G 1/8
G Lubricator

J Release for disassembly (J=25) (J1=20)
P Identification plate
S Compressed air utilisation orifice (tube 4x6)





The connection of the automatic draining plug (BVA) outlet is to be made with ¾ '' diam. Welded tube held by a collar without the need for a gradient.

There are two possible connections :
- return at the top of a compartment
- return to a separate tank

CHARACTERISTICS TO COMPLY WITH

MF version	Use of a 3-way valve before an SBL MF type manual control counter or selective type pneumatic counter.				
Installation	Port centerlines horizontal, pneumatic connections directed upwards.				
Supply	Under load (gravity supply). The connection pipe from the compartment must be at a $\geq$ 3% slope continuously downwards slope $\geq$ 3%. The vacuum generated by the maximum use rate shall not exceed 0.150 bar;				
Connection	Flanged directly to the pump suction circuit. Otherwise, schedule : - Distance $\leq$ 0.5 m : horizontal connection pipe - Distance >0.5 m : connection pipe with a down slope to the pump $\geq$ 5%.				
Temperature range	-20°C to +70°C				
Maximum hydraulic pressure in the DMX	3 bar				
Maximum pneumatic pressure in the DMX	5.5 bar				
Pneumatic supply	One lubricator filter must be used. Minimum pressure: 5.5 bar.				
Minimum delivery	200 l				
Maximum flow rate	66 m^3/h				
Measurable fluids	Ordinary petrol, 5-star petrol, diesel fuel, domestic fuel oil, kerosene, etc.				
Hydraulic pressure constraints	Flow rate m^3/h	30	40	50	66
	Valve calibration (bar)	0.3	1.4	1.4	1.4
	Minimum operating pressure (bar)	1.4	1.9	2.2	2.6
Approval validity	- European with mechanical counter used - French only with electronic counter used				
Filtration capacity	Bottom basket : 1,300 microns Top basket : 400 microns				

LIST OF COUNTERS THAT CAN BE FITTED TO THE UNIT

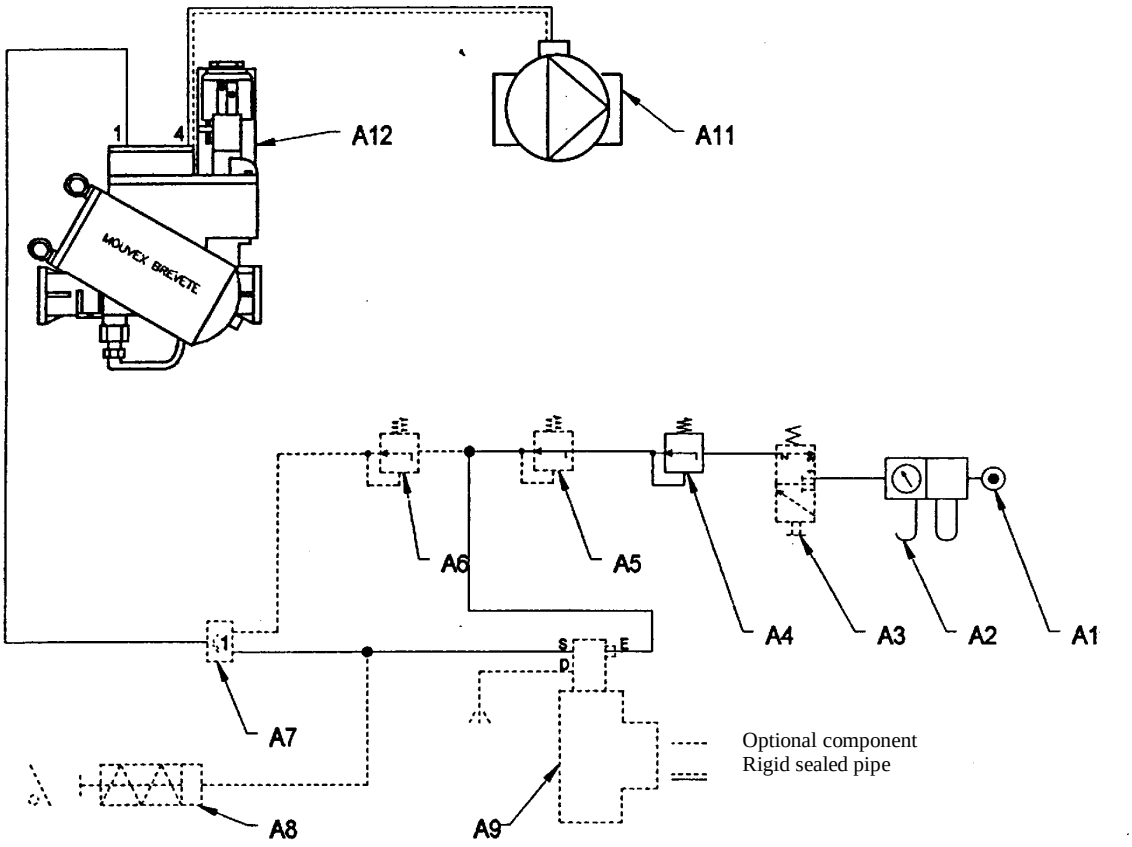
MECHANICAL COUNTERS

MANUFACTURER	MODEL	MINIMUM FLOW RATE (m^3/h)	MAXIMUM FLOW RATE (m^3/h)	MAXIMUM PRESSURE (bar)	APPROVAL CERTIFICATES
LIQUID CONTROL	M7	2.7	27	10.5	UK81 1782 STD 3994, dated July 19, 1991
LIQUID CONTROL	M15	5.4	54	10.5	UK81 1782 STD 3994 dated July 19, 1991
LIQUID CONTROL	M25	6.6	66	10.5	UK81 1782 std 3994 dated July 19, 1991
SATAM	ZC17.24.24	2.4	24	8	F95.00.422.002.0 dated July 12, 1995
SATAM	ZC17.24.48	4.8	48	6	F95.00.422.002.0 dated July 12, 1995
OIL METER	SBM 75	3	30	20	D81 //5.243.19 dated September 25; 1991
OIL METER	SBM 150	6	60	10	D79 5.243.01 dated February 2, 1989
PERNIN	NVR 20	2	20	8	F96.00.422.002.0 dated September 11, 1996
PERNIN	NVR 45	4.5	45	8	F96.00.422.002.0 dated September 11, 1996
PERNIN	NVR 80	8	80	8	F96.00.422.002.0 dated September 11, 1996

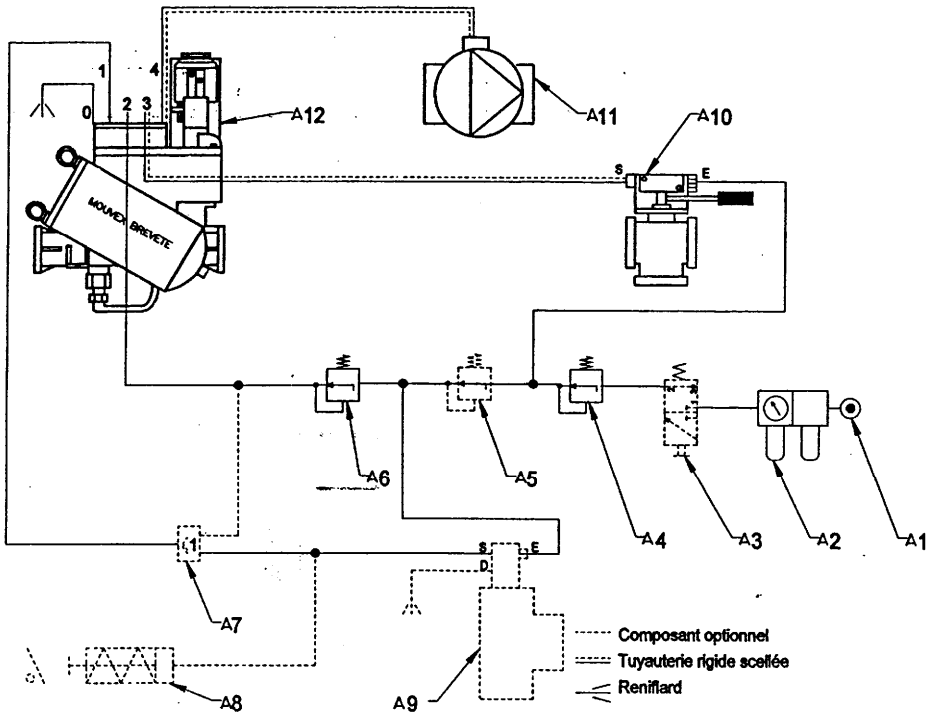
ELECTRONIC COUNTERS

LIQUID CONTROL measurement chambers M7, M15 or M25 (cited above) associated with the electronic indicator and calculating device, according to decision No. 99.00.422.004.1 dated June 4, 1999

DMX 3 EXTERNAL PNEUMATIC DIAGRAM



A1 - P>6 bar connected as bypass on movement takeoff
A2 - Lubricator filter
A3 - Emergency stop
A4 - 5.5-bar pressure regulator
A5 - Flow regulator
A6 - 3-bar pressure regulator
A7 - "or" cell
A8 - Motor acceleration cylinder
A9 - Flow rate detector
A11 - CC8 pump with pneumatic bypass, not spring-loaded
A12 - DMX 3



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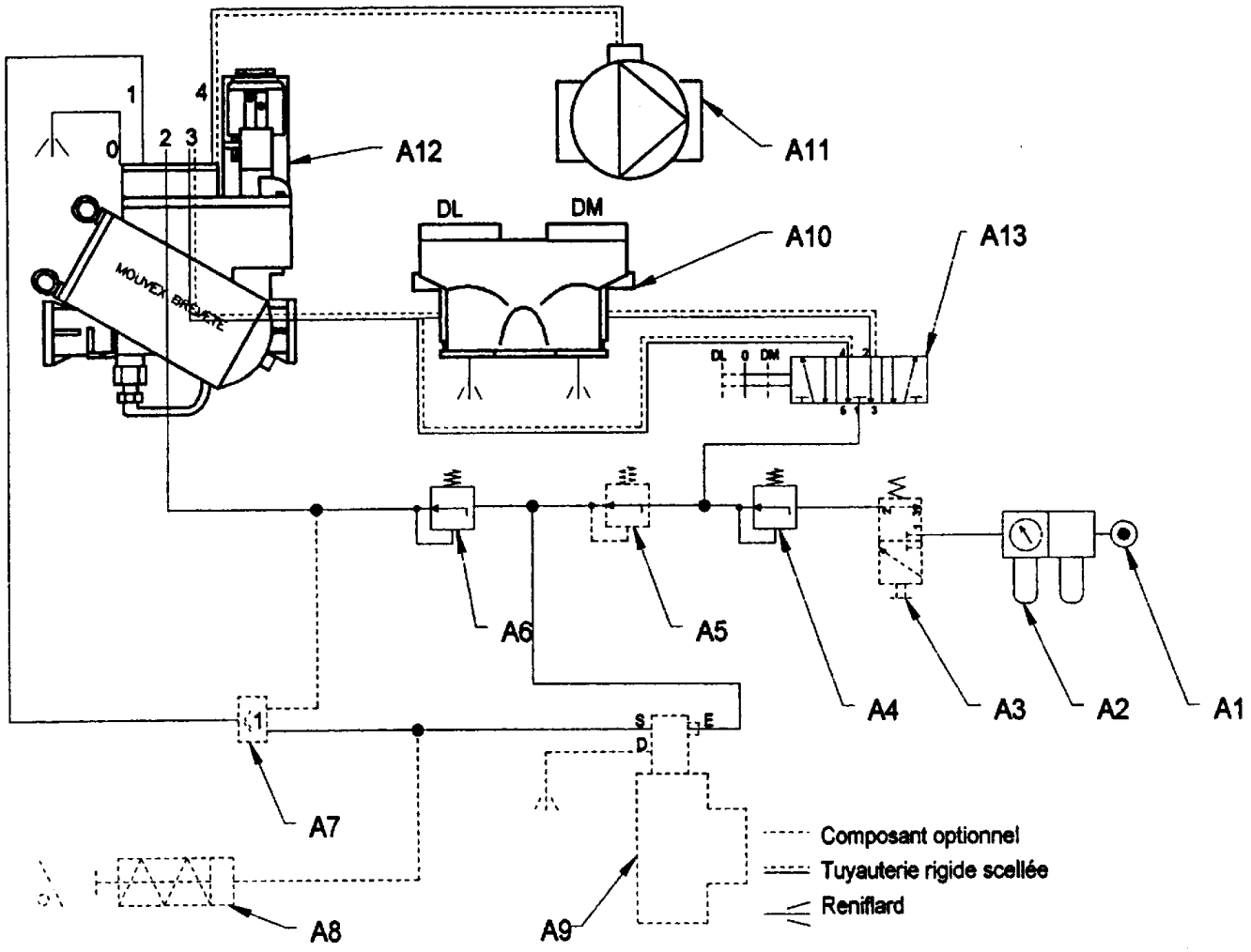
A4 - 5.5-bar pressure regulator
A5 - Flow regulator
A6 - 3-bar pressure regulator
A7 - "or" cell
A8 - Motor acceleration cylinder
A9 - Flow rate detector
A10 - SBL MF manual FD valve
A11 - CC8 pump with pneumatic bypass, not spring-loaded
A12 - DMX 3 MF



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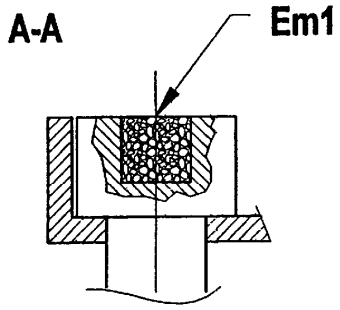
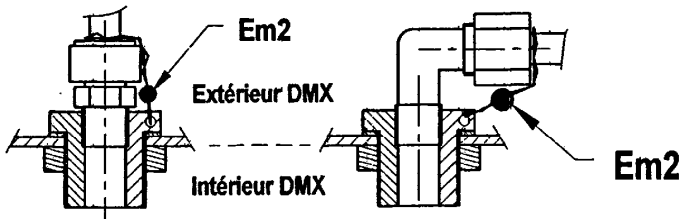
A5 - Flow regulator
A6 - 3-bar pressure regulator
A7 - "or" cell
A8 - Motor acceleration cylinder
A9 - Flow rate detector
A10 - Selective pneumatic valve
A12 - DMX 3 MF
A13 - 5/3 distributor with 3 and 5 exhausts sealed, prohibiting any blanking

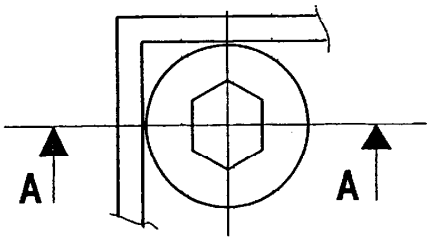
DMX 3 SEALING



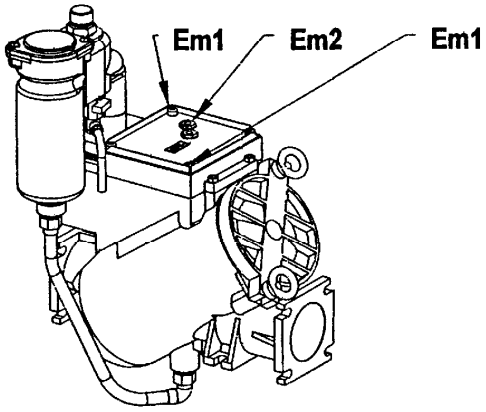
LAYOUT Em2 (scale 1)



Straight coupling or Elbowed coupling



LAYOUT Em1 (scale 2.5)



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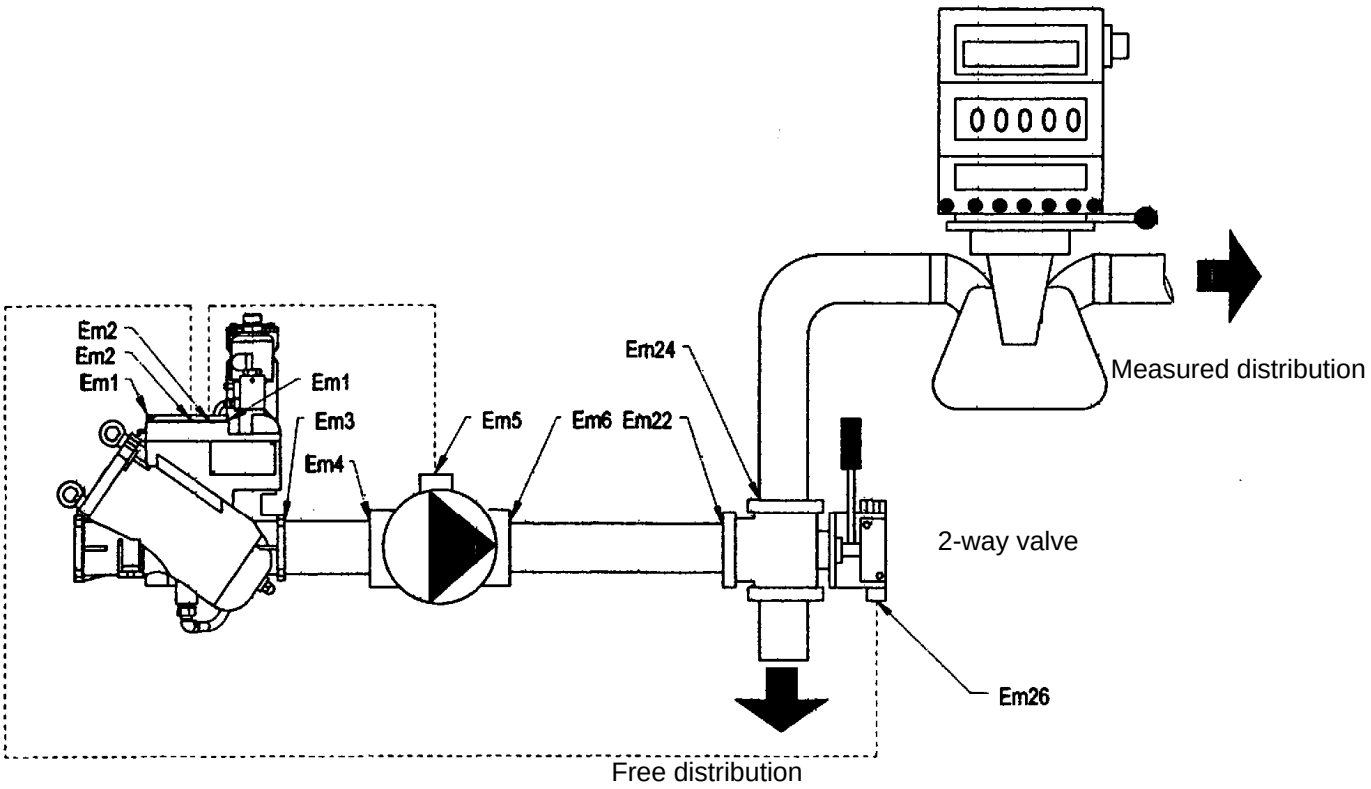
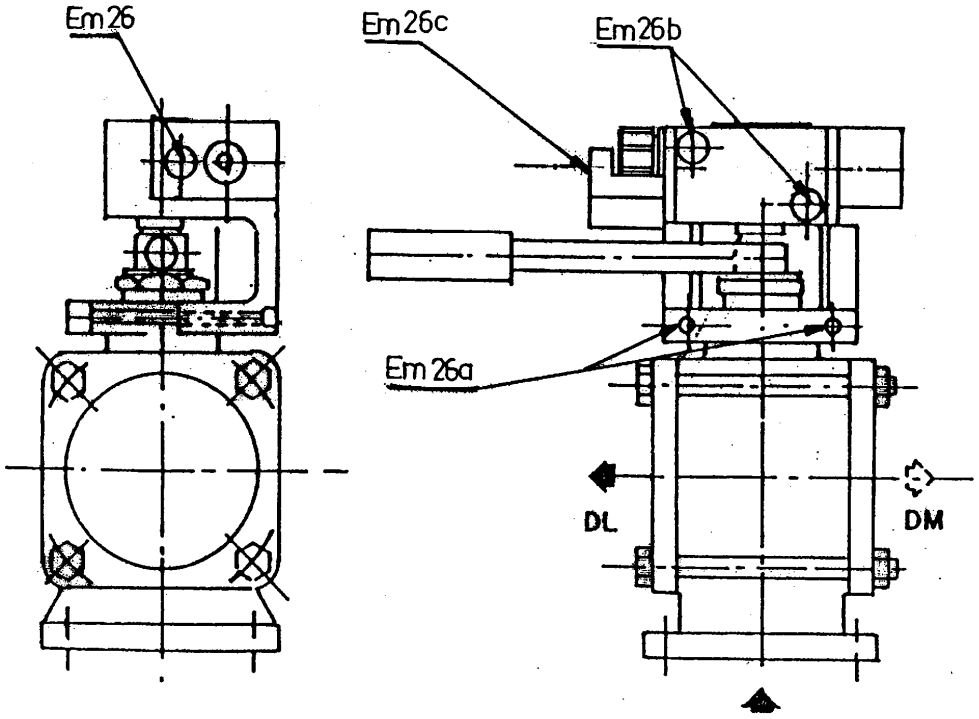
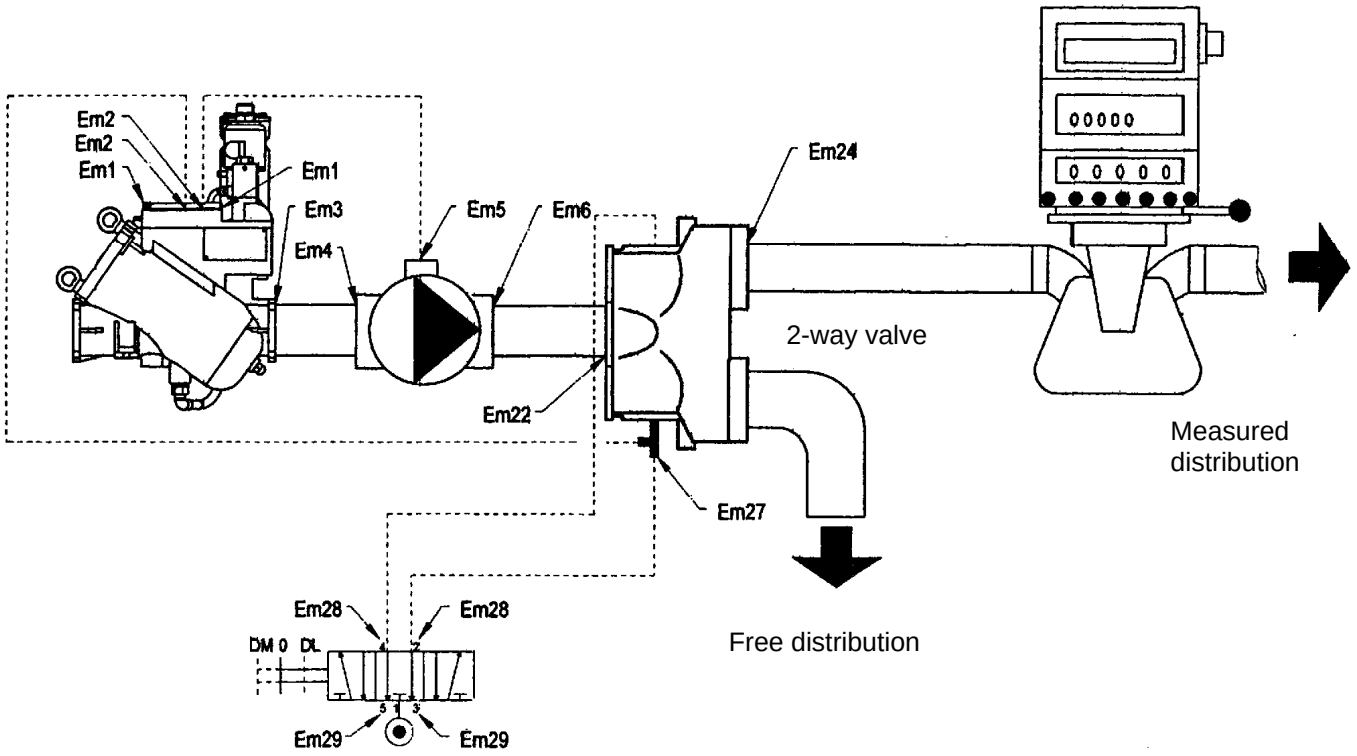
SEALING WITH MANUAL VALVE

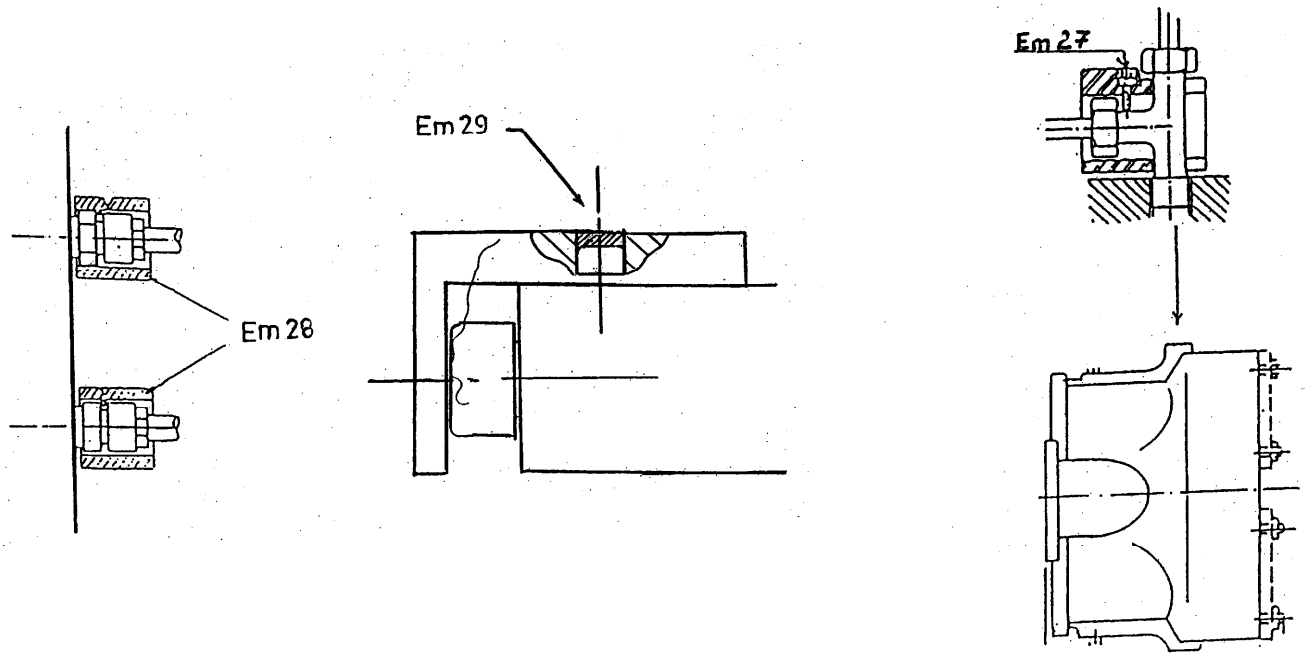
OPERATION OF DMX 3 MF
WITH FREE DISTRIBUTION AND MANUAL VALVE



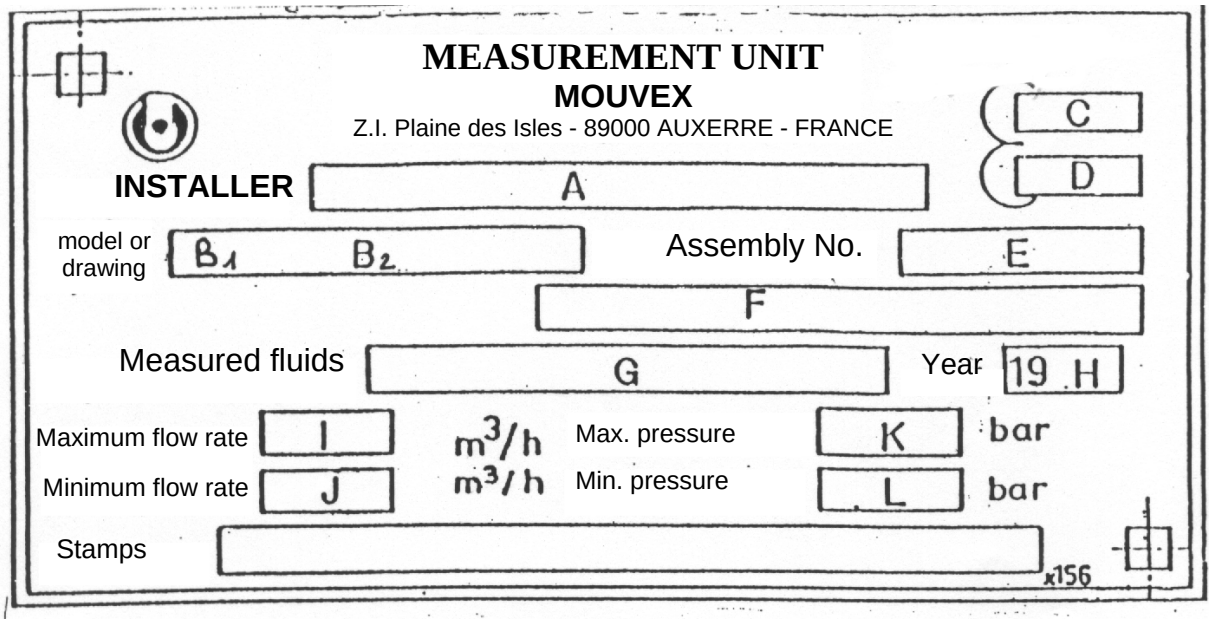


OPERATION OF DMX 3 MF
WITH FREE DISTRIBUTION AND PNEUMATIC VALVE





WORDING TO STAMP ON THE MEASUREMENT UNIT PLATE (supplied blank)



For mechanical counter:

- A : Name of the installer
- B1 : "E DMX 3" or "E DMX 3 MF"
- B2 : Not applicable
- C : "F99"
- D : "462012"
- E : Serial No.
- F : "Minimum delivery 200 liters"
- G : Measured product
- H : Year

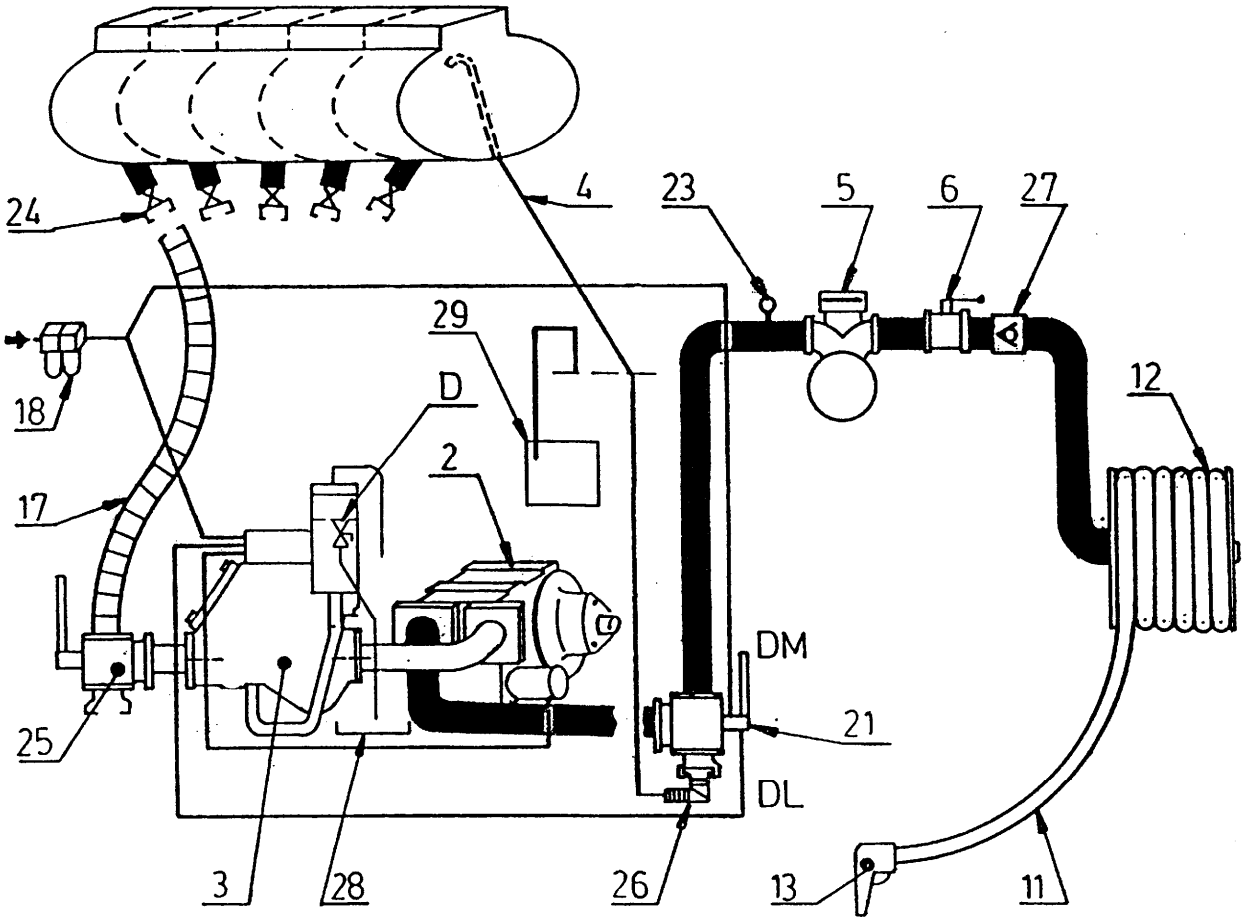
For electronic counter:

- B2: "F99462013"
- C: Not applicable
- D: Not applicable

i	30	40	50	66
J	Minimum permissible flow rate per counter			
K	Maximum permissible flow rate per counter			
L	0.3	1.4	1.4	1.4

OPERATION

Your delivery system is equipped with a gas separator DMX 3 MF in combination with a pump CC8 with pneumatic bypass.
This allows you to carry out distribution and measurement of a product (DF0 -Domestic Fuel Oil in most cases for the DMX 3 MF).
The DMX 3 MF do not require any specific operation, all that is needed is to link the hose 17 to the compartment drained, to open the compartment valve and to start the pump. The measured distribution can begin.



2 Vane pump CC8 with non-spring loaded pneumatic bypass
3 Gas separator DMX 3 MF
4 Degassing circuit connected to a tank
5 Counter
6 Manual stop valve
11 Plain hose on hosereel for measured distribution
12 Hosereel
13 Gradual closing type nozzle
17 Suction pipping or hose
18 Filter-Lubricator assembly
21 3-way valve type SBL-MF allowing opeartion in measured distribution (MD) or in free draining (FD)
23 Pressure gauge
24 Drain valve
25 3-way valve type SBL
26 Automatic draining valve
27 Check valve (not necessary when equipped with flow detector)
28 Drip tray
29 Draining tank

MEASURED DISTRIBUTION, SBL-MF valve in DM postion

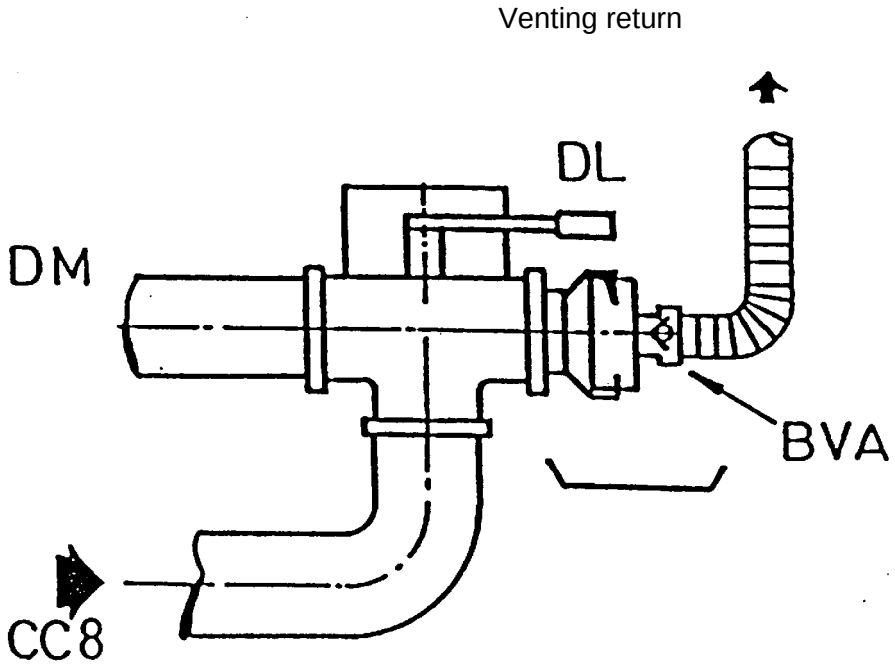
The DMX 3 MF does not require any specific operation, all that is needed is to link the hose 17 to the compartment to be drained, to open the compartment valve and to start the pump. The measured distribution can begin.

Other functions, SBL-MF valve in FD position

Before moving to another functionning mode, drain the installation between the valves 24 and 21 in order to avoid product mixes and product loss.

To drain :
⇒ make sure that the installation includes an automatic draining plug (ADP) well locked
⇒ make sure that the foam return compartment (or drainage tank), can accommodate the volume of the installation to be drained.
⇒ start the pump
⇒ place valve 21 in the FD position
⇒ make an air entry to valve 24

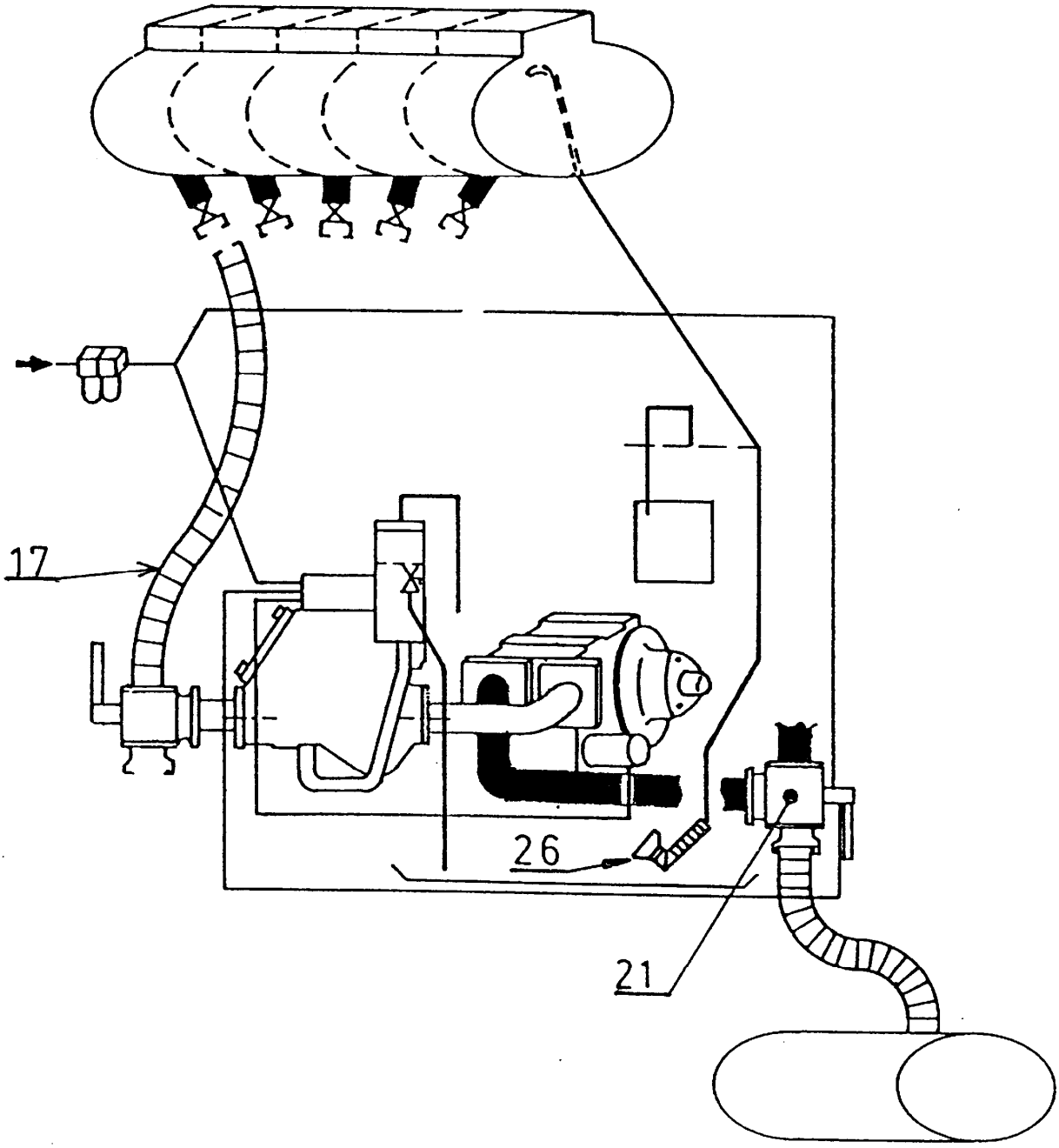
The operation is finished after evacuation of the foam visible in the transparent hose



The plug ADP is mounted on the free draining port (FD) and when the valve lever is placed in this position, allows draining by the venting return, the suction piping, the DMX 3 MF and the pump.

DISCHARGING A MEASURED COMPARTMENT USING THE PUMP

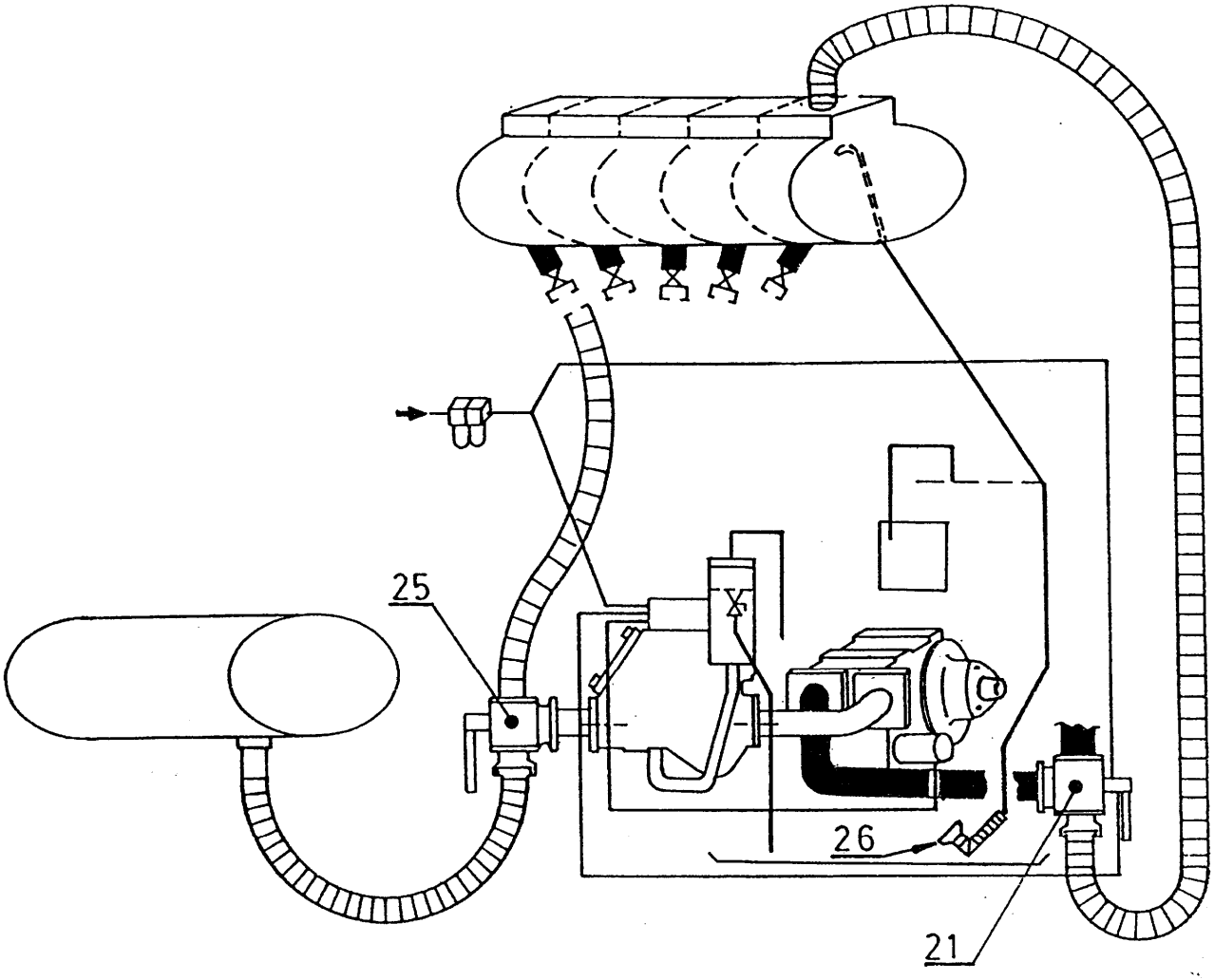
- Remove the plug ADP (26), connect the valve 21 to the storage tank, connect the hose 17 to the compartment to be drained, open the corresponding valve and start the pump. When draining is completed, drain the hose into the storage tank.



UNMEASURED RECOVERY

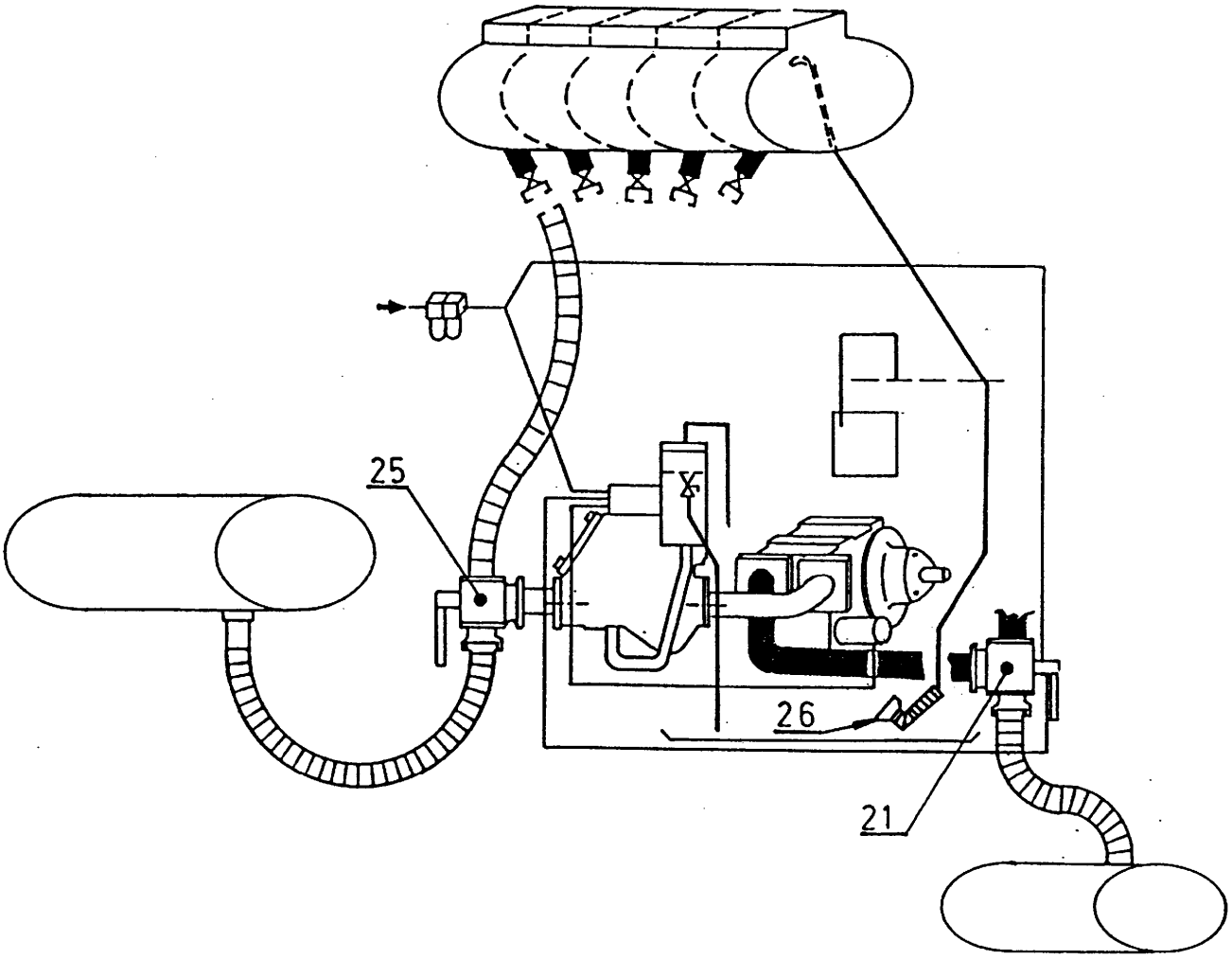
- Connect the tank from which the recovery is to be made to the valve 25.
- Remove the plug ADP 26 and connect the valve 21 using a hose to the compartment to be filled through the dome (do not forget to maintain hose in the compartment). Start the pump and carry out the recovery.

Please note :
In recovery, once the pump has been started, it is not necessary to run it at too high a speed because depending on the suction conditions, a state of cavitation can be quickly reached, that is : poor functioning of the pump, noise, vibration, and flow inferior to normal flow considering the pump speed.
To return to correct functioning, it is only necessary to reduce the rotation speed of the pump, the lenght of the hose and to increase the hose's diameter.



OPERATION USING THE PUMP AS A TRANSFER PUMP

↳ Remove the plug ADP (26), connect the tank from which the transfer is to be made to the valve (25), connect the valve (21) to the tank to be filled and start the pump.

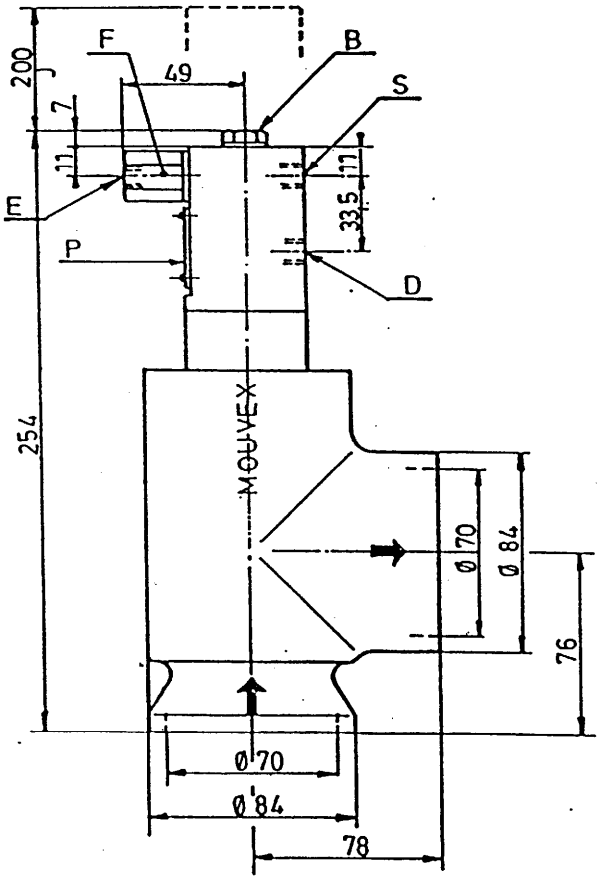


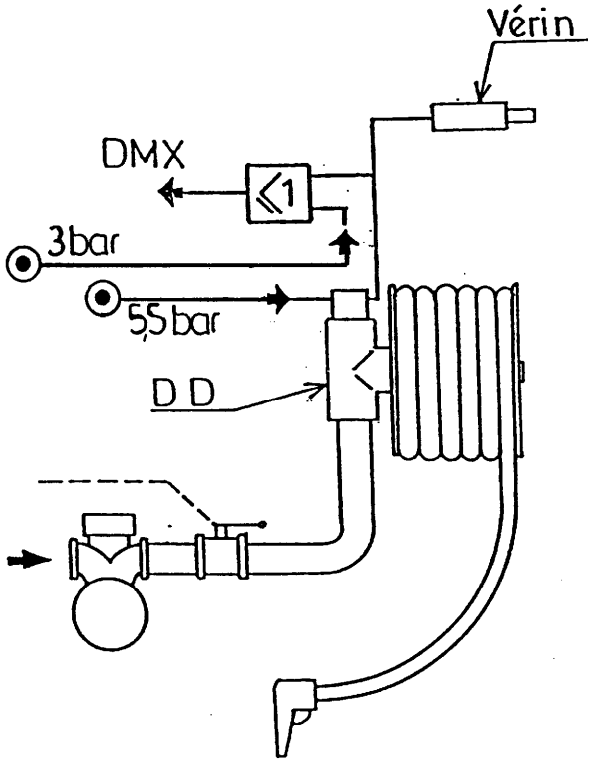
FLOW DETECTOR

The flow detector is controlled by simple manipulation of the nozzle. It is obligatory that the flow detector be linked to a pneumatic acutation cylinder, its effect is to :

- ✓ accelarate the engine turnover
- ✓ increase the pump pressure, when the nozzle is opened and the flow goes over the preset threshold (approximately 5 to 7 m3/h)
- ✓ slow the engine turnover
- ✓ reduce the pump pressure, when the gun is closed and the flow falls below the preset threshold (approximately 5 to 7 m3/h)

Note – For a good functionning, the flow regulator must be regulate for a delivery > at the preset Threshold (5 to 7 m3/h)

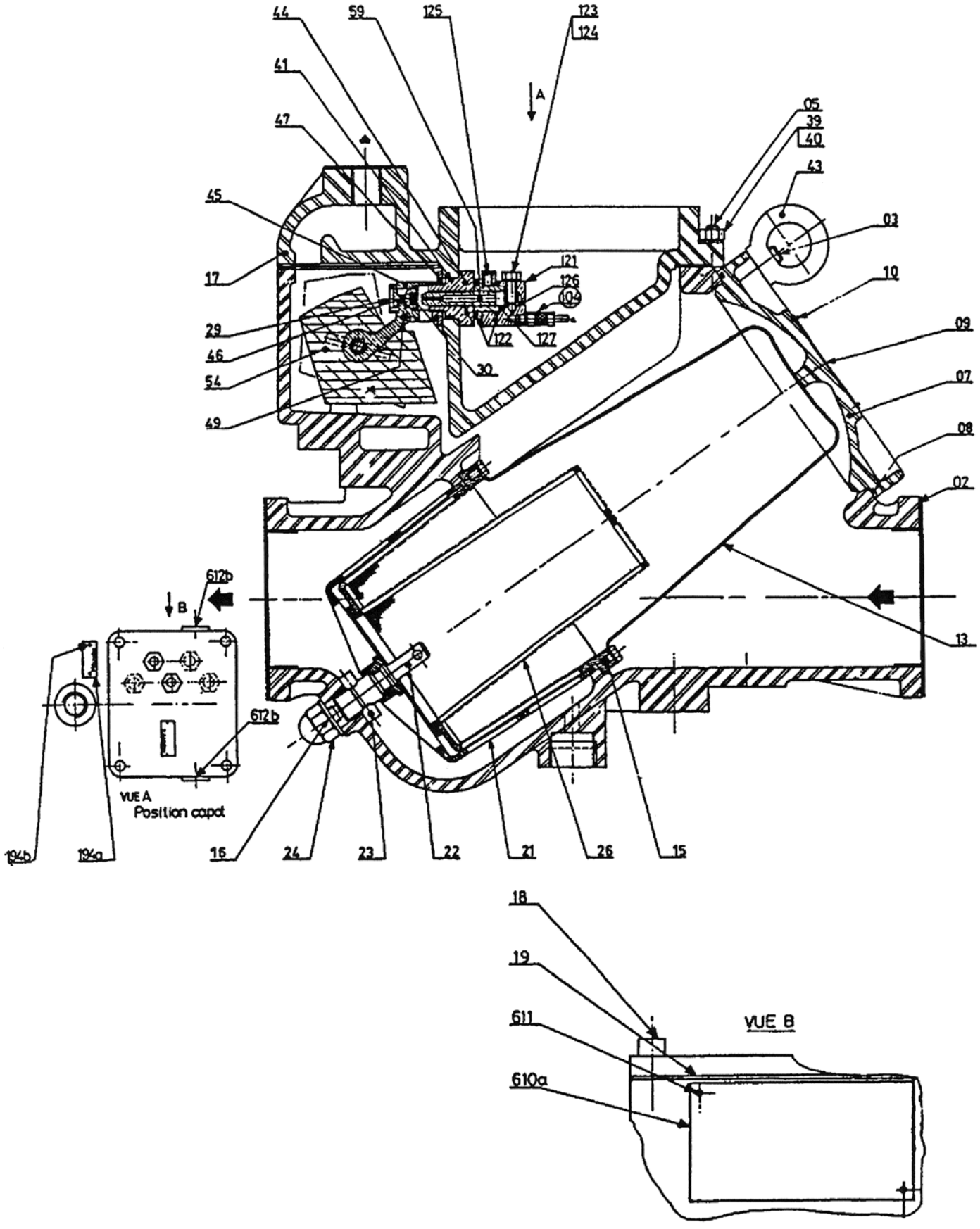




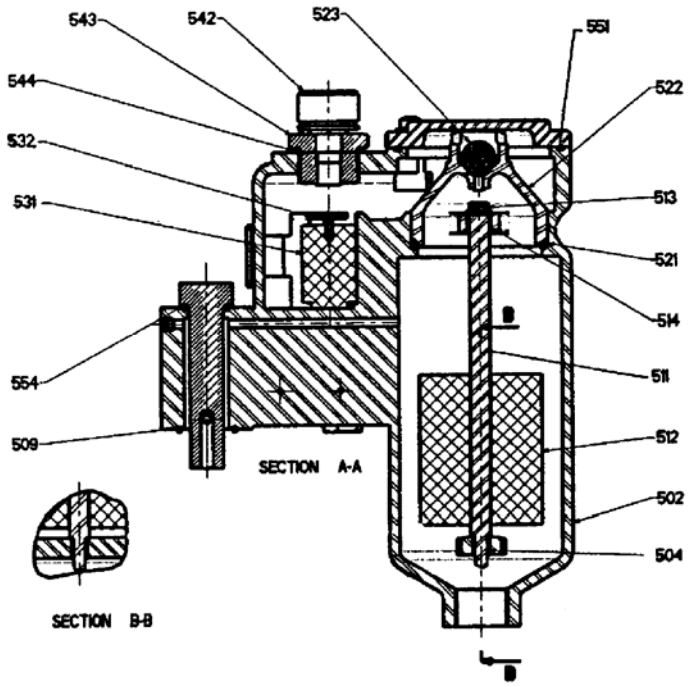
B Regulation access cover
D Decompression outlet G 1/8
E Compressed air inlet G 1/8
F Microfilter
J Dismantling clearance
P Plate
S Outlet for use with compressed air G 1/8

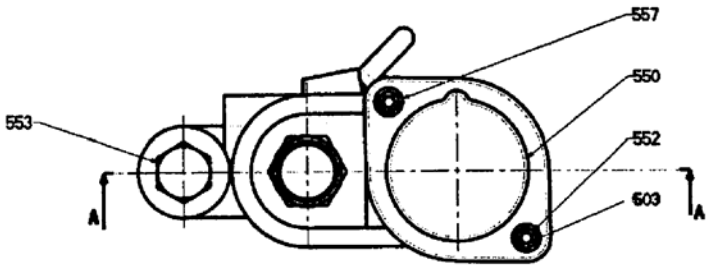
EXPLODED VIEW

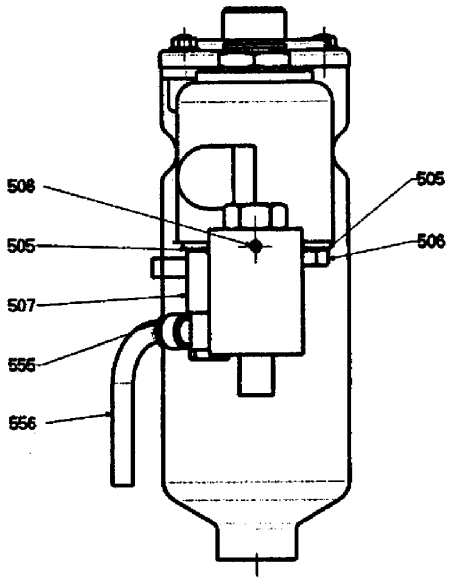
DMX

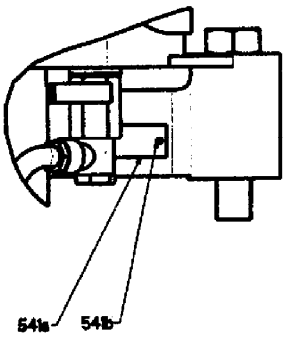


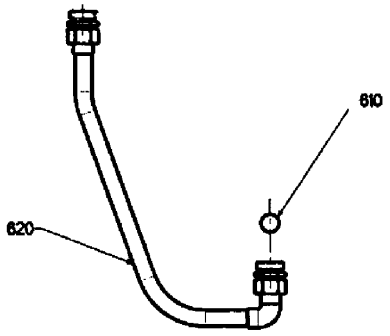
COMPLETE DRY VALVE



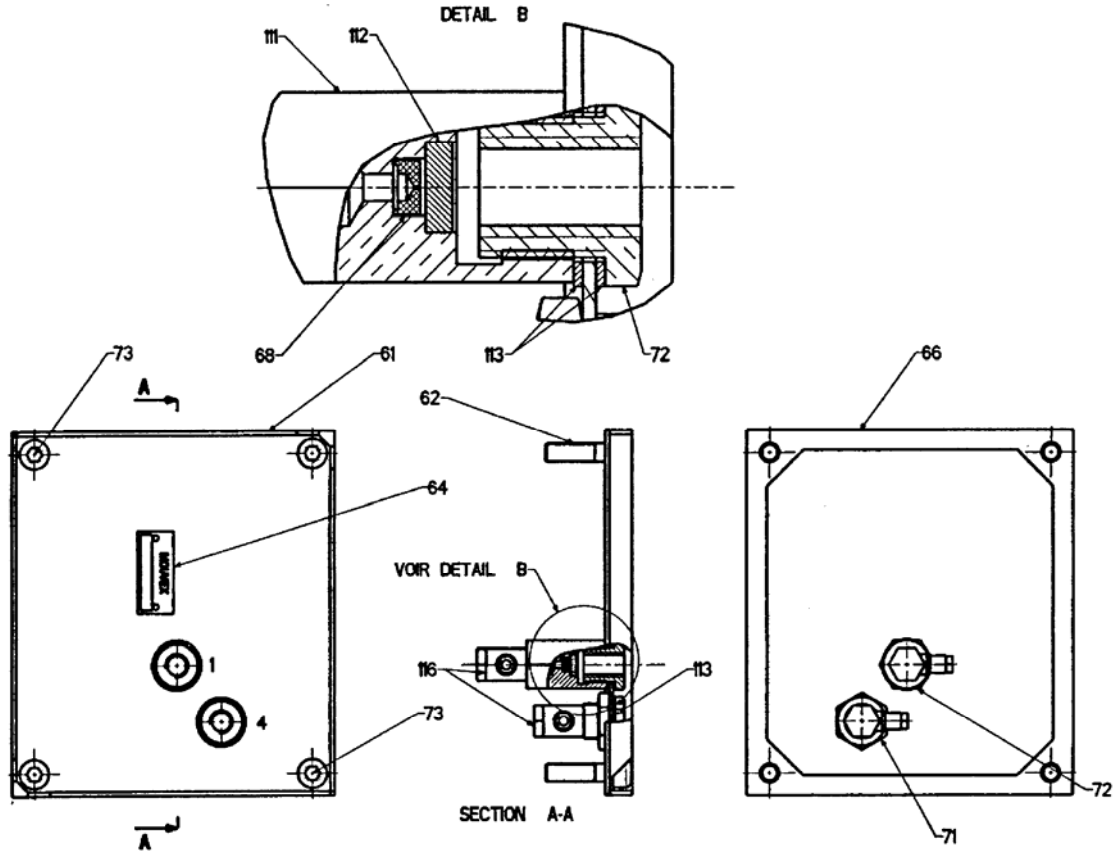




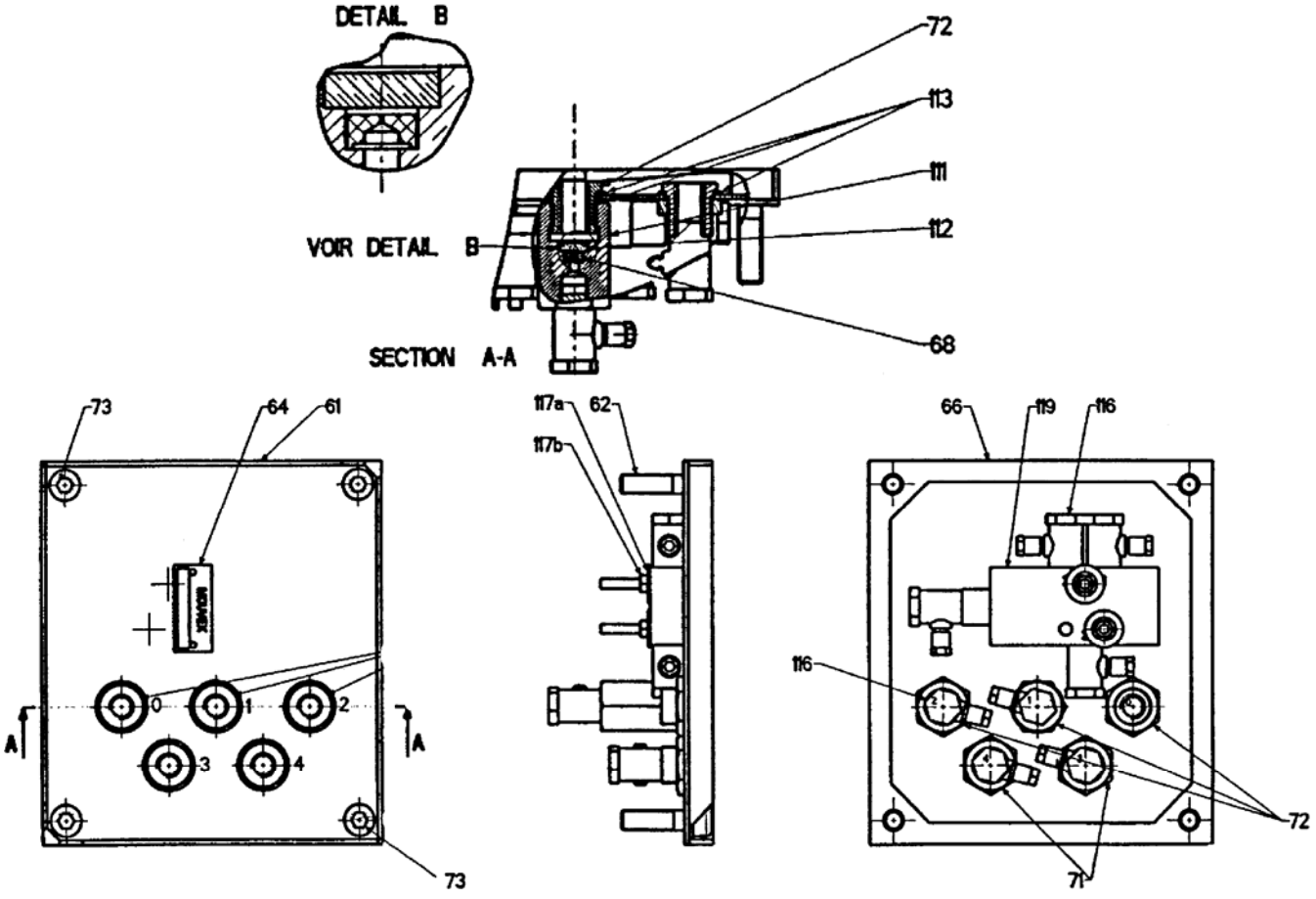




DMX COVER



DMX MF COVER



MALFUNCTIONING

CAUSES AND REMEDIES

PROBLEMS	POSSIBLE CAUSES AND REMEDIES
No flow See 6 - 15	1 - Air intake on suction pipe
Irregular flow See 1 - 2 - 3 - 7 - 8	2 - Vacuum ≥ 0.150 bar in the DMX → Reduce losses of head on suction pipe or reduce flow rate
No high flow rate See 4 - 5 - 7 - 8 - 9 - 10 - 15 - 16	3 - Vortex effect in the compartment → Install an anti-vortex device
No low flow rate See 10 - 11	4 - DMX filter clogged → Clean the filter
Hydrocarbons in the pneumatic circuit See 9	5 - No air or not enough air in the bypass → Check circuit sealing and calibration of pressure regulators
The counter does not stop when there are no more products to supply See 7 - 8 - 12 - 14	6 - Condensate chamber of dry valve full → Bleed it using valve (507), check that . Foreign bodies do not affect movement of the float (512) . The seal (513) is in good condition
Metrology error on stock rupture test See 12 – 13	7 - Cover (14) HS assembly may have a sealing fault at the float valve (29) → Replace cover assembly
	8 - Cover (60) HS assembly may have a sealing fault or incorporate an operating fault in the valve (68) → Replace cover assembly
	9 - Bypass diaphragm pierced → Replace diaphragm
	10 - Float detector adjustment wrong → Refer to flow detector Instructions for adjustment
	11 - Exhaust pipe of flow detector clogged
	12 - Calibration valve inappropriate or defective →Check compliance with recommendations
	13 - Operating pressure too low → Check compliance with recommendations. Add a diaphragm, if necessary, to increase losses of head.
	14 - Defective FD valve → Check that it does not send air to the DMX at (3) when in MD position
	15 - Closing or blocking of a component in the system → Check opening of valves and the counter
	16 - Hydrocarbon paraffins due to excessively low temperature → Temporarily remove the top basket (25)