

TECHNICAL INSTRUCTIONS	330 (e)
Revision	E

FLOW DETECTOR

INSTALLATION

OPERATION

MAINTENANCE

**BLACKMER
ZI PLAINE DES ISLES
F- 89000 AUXERRE**

Technical Assistance / RepairTél. : +33.86.49.86.03
.....Fax : +33.86.49.86.48
Spare parts / AdviceTél. : +33.86.49.86.40
.....+33.86.49.87.09
.....Fax : +33.86.49.87.17
e-mail : contact@blackmer-mouvex.com

**BLACKMER GmbH
Auf dem Zehnthöbel 22**

D-64572 BUTTELBORN - WORFELDEN

Tel :+49/6152/9869-0
Fax :+49/6152/9869-10
e-mail : willkommen@blackmer-mouvex.com

Your distributor :

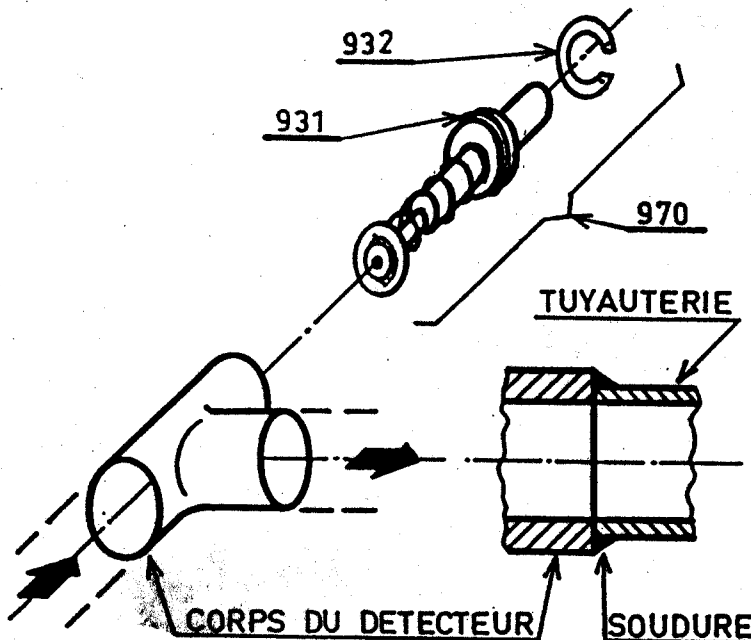
On full opening of the nozzle, the flow increases, and on reaching the preset threshold, the detector then acts in the following way:

- on the actuation cylinder (if your system is equipped with one) by accelerating the lorry engine's turnover rate.
- on the pumps pneumatic bypass by increasing the pressure, which causes the shift to big flow.

On gradual closing of the nozzle, the flow decreases, when it reaches the preset threshold, the detector acts in the following way :

- on the actuation cylinder (if your equipment is equipped with one) by reducing the lorry engine's turnover rate.
- on the pump pneumatic bypass by reducing the pressure, resulting in the shift to small flow.

INSTRUCTIONS FOR MOUNTING IN THE INSTALLATION



The flow detector must be inserted in the pump's delivery system.

The detector body is equipped with a welding Tee, which eases its incorporation into the system.

In order to weld the detector body to the system's piping, you must remove the assembly 970 (valve-support-head) by removing the retaining ring 932.

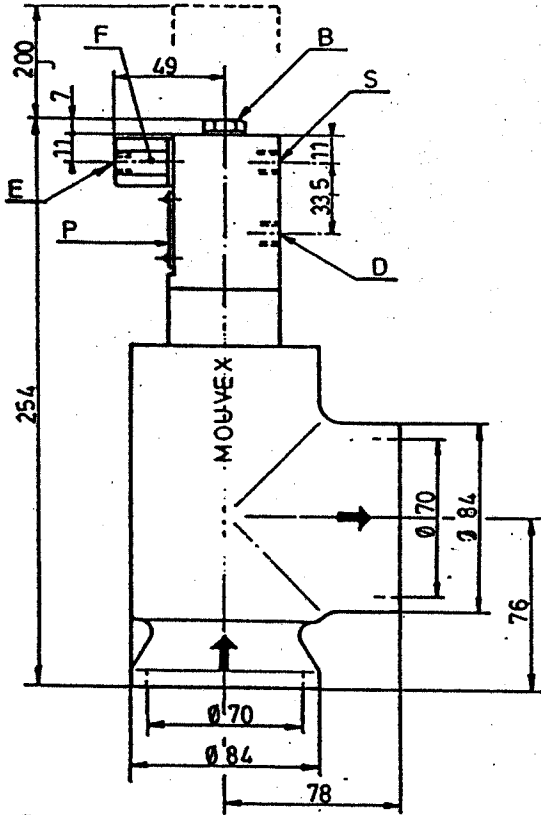
After welding, replace the assembly 970 being careful not to damage the seal 931 (grease the seal to make this operation easier).

Replace the retaining ring 932.

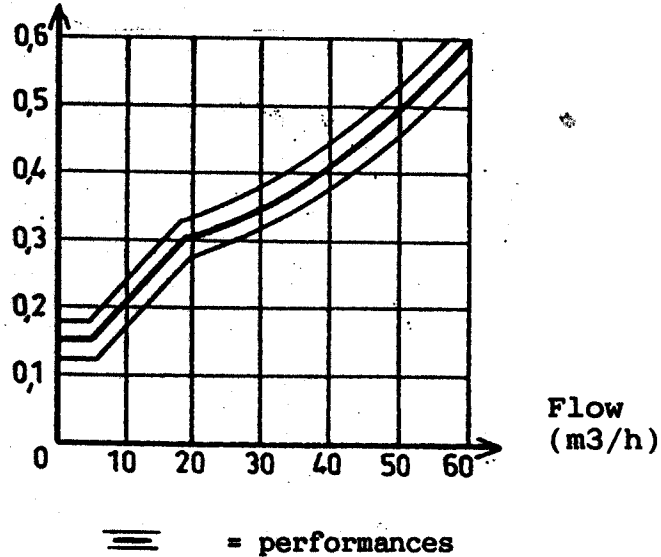
FLOW DETECTOR

Installation - Instruction for use

Technical instructions No. 330e



Head losses (bar)



- B - Setting access cover
- D - Decompression outlet - G 1/8
- E - Compressed air inlet - G 1/8

- J - Dismantling clearance
- P - Name plate
- S - Inlet for compressed air use

OPERATION - INSTRUCTIONS FOR USE

The flow detector allows your equipment to detect a shift from small flow to big flow and vice versa, so as to control flow more effectively. It incorporates an adjustment system which allows you to increase the flow rate from 3 to 14 m³/h. The flow detector is delivered preset at 6 m³/h.

(For some very special applications the flow detector is preset at 10 m³/h, in that case the screwhead marked B on drawing is stamped with letter A).

The compressed air supply inlet (E) of the flow detector is protected against the entry of foreign bodies by a microfilter (F). This microfilter does not require any particular maintenance.

Pneumatic connection

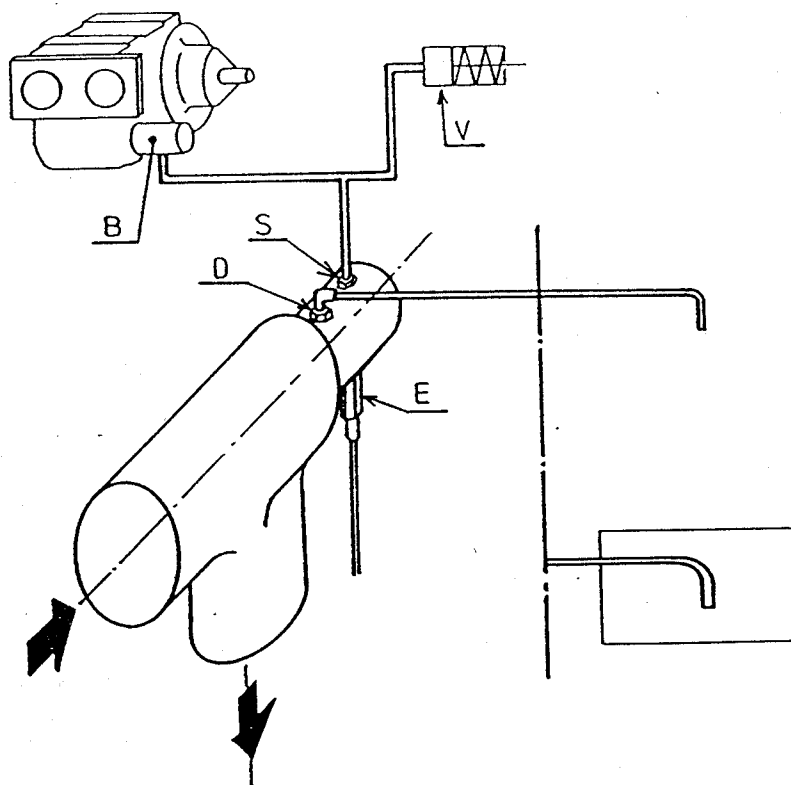
The E intake is connected to the compressed air supply.

The S outlet is connected to the pneumatic accessories to be controlled (pneumatic bypass and/or actuation cylinder, if the system is equipped with one).

The decompression outlet D is imperatively connected to a pipe directed downwards or better, into a dry area if possible.

When the flow detector is linked with a DMX or a DMX-MF, it comes equipped with a pneumatic kit including a "or" cell and a sealed regulator preset at 3 bar.

It is advisable to carry out connections following the diagrams from the technical instructions 333 (DMX) or 335 (DMX-MF).



Pipe directed downwards to open air

Pipe directed downwards to a dry area

- B Pneumatic pump bypass
- D Decompression outlet
- E Compressed air supply
- S Pneumatic accessories control
- V Actuation cylinder



ADJUSTING THE DETECTION THRESHOLD

Remove the cover 965 and its seal 966.

To reduce the detection threshold: turn the seat 963 clockwise (1 turn = 2 m³/h approx., minimum setting (m³/h).

To raise the detection threshold: turn the seat 963 anti-clockwise (1 turn = 2 m³/h approx., maximum setting 14m³/h) taking care not to go further than the hole linking the outakes E and S.

Replace the cover 965 with its seal 966.

CHANGING THE PNEUMATIC HEAD REF. 940

Cut the supply of compressed air.

Before disconnection, note the position of each pneumatic hose.

Remove the screws 947, free the head assembly 940 which is fitted and replace it with a new head assembly.

Take care not to forget the seal 946 and replace the valve 961 in its correct position (seal on the same side as seat 963).

Replace the pneumatic hoses according to their original positions.

CHANGING THE HEAD SEAL REF. 933

In order to carry out this operation, provide the gasket kit and accessories 980.

Cut the supply of compressed air, note the position of each hose and disconnect them.

Taking care to drain the system first, next:

Remove the retaining ring 932 and free the valve-support-head assembly 970 from the detector body 901.

Remove the screws 947 and take out the head assembly 940.

Push the valve 911 while maintaining pressure on the spring 917 to come against the support 935, keeping in place the rod 920 taking care not to scratch it, and remove the screw 922.

Disengage the valve assembly 910 from the support 930, and then withdraw the sealing surface 934 and the seal 933.

After inspecting the state of the rod 920 which must not be scratched, and the cleanliness of the filter 937, replace in the support 935, a new seal 933 lightly greased, next the sealing surface 934, and then the valve assembly 910 without forgetting the spring 917.

As in the dismantling operation, compress the valve 911 against the support 935 while holding the rod 920 without scratching it and cap the end of the rod with a nut 922 glued on using Loctite 243.

After placing a new seal 946, replace the pneumatic head assembly 940, with valve 961, in its correct position (with the seal on the same side as the seat 963). Tighten the screws 947.

Change the seal 931, then replace the head-support-valve assembly 970 in the body 901 and the retaining ring 931 in its groove. (Grease the seal 931 so as to ease the introduction of the support 935 into the body 901).

Replace the pneumatic hoses according to the original position.

Key: * = parts or assemblies which can be supplied

REF.	No.	DESCRIPTION
* 901	1	DETECTOR BODY
* 970	1	VALVE-SUPPORT-HEAD ASSEMBLY (910+930+940)
* 910	1	VALVE ASSEMBLY
911	1	Unequipped valve
912	1	Decompression valve
913	1	Guidance axis
914	1	Washer
915	1	Automatic break screw
916	1	Compensator spring
917	1	Valve spring
918	1	Rod guide
920	1	Unequipped rod
921	1	Flush screw
922	1	Screw (see 980)
* 930	1	SUPPORT ASSEMBLY
931	1	Support seal (see 980)
* 932	1	Retaining ring (see 980)
933	1	Rod seal (see 980)
934	1	Sealing surface
935	1	Unequipped support
936	2	Support bearing
937	1	Filter
939	1	Surface bearing
* 940	1	PNEUMATIC HEAD ASSEMBLY
941	1	Detector head
943	1	Name plate
944	2	Rivets
946	1	Head seal (see 980)
947	2	Head fixation screw (see 980)
960	1	VALVE ASSEMBLY (see 980)
961	1	Valve
962	1	Valve seal
963	1	Seat
964	1	Seat seal (see 980)
965	1	Plug
966	1	Plug seal (see 980)
969	1	VALVE AND FILTER ASSEMBLY
110	1	Equipped filter
111	1	Filter body
112	1	Filter
113	1	Filter seal
114	1	Valve
* 980	1	GASKET KIT AND ACCESSORIES (922+931+932+933+946+947+960+964+966)

To order replacement parts, please indicate:

- The information TECHNICAL INSTRUCTION No. 330e
- The REFERENCES and DESCRIPTIONS of the parts required (only the parts or assemblies for which the reference is preceded by an (*) can be supplied).

