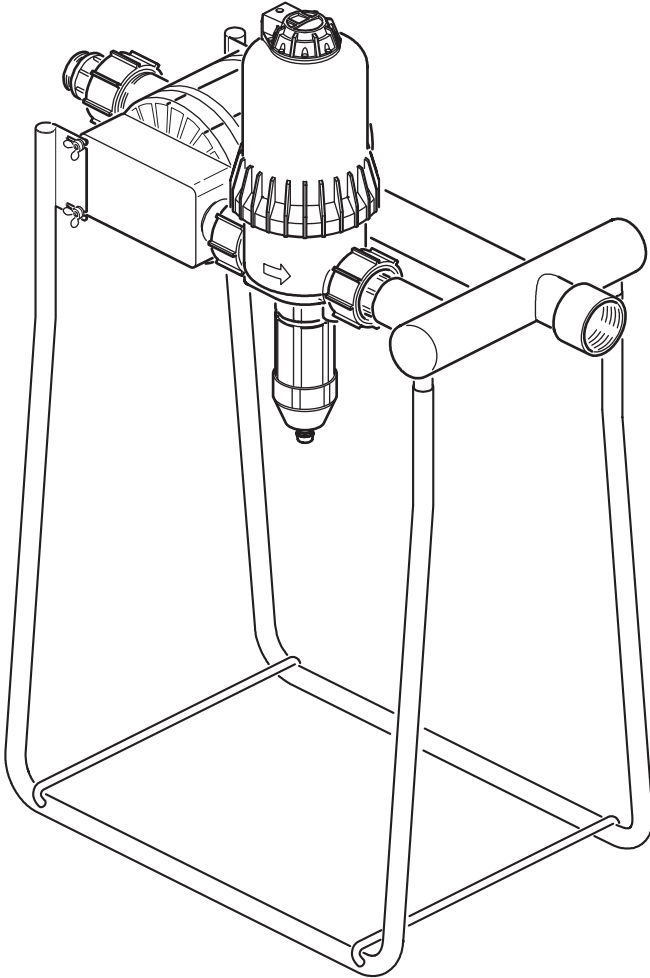




**DOSATRON**<sup>®</sup>  
I N T E R N A T I O N A L

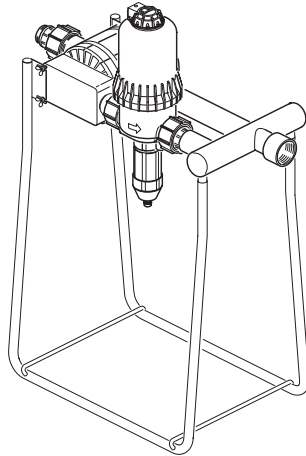


PROPORTIONAL INJECTOR D 30 S  
**USER'S MANUAL**





# SUMMARY



**CHAPTER 1**  
**INSTALLATION**  
..... PAGE 3

**CHAPTER 2**  
**PUTTING THE PROPORTIONAL**  
**INJECTOR INTO OPERATION**  
..... PAGE 15

**CHAPTER 3**  
**MAINTENANCE**  
..... PAGE 19

## **SPECIFICATIONS**

- Practical operating **flow range** : **8 to 30 m<sup>3</sup> /h**
- Operating **pressure** : **2 to 110 PSI** (0.5 Bar to 8 Bar) for a temperature lower than **40° C** (104° F)
- Adjustable **ratios** : **1:400 to 1:80** (0.25% to 1.25%)
- **500** microns, **32** mesh protective filter
- Mixing chamber
- Hydraulic by-pass

incorporated

**Fitting size** : Inlet **2"** male thread, outlet **2"** female thread  
Maximum operating temperature : **40° C** (104° F)

## **UNIT SIZE**

- Length 33"1/2 x width 17"2/3 x height 45"2/3 (85 x 45 x 116 cm)
- Weight : 24 kg

## **SHIPPING CONTENTS 1**

- 1 Proportional 8 m<sup>3</sup>/h Injector
- 1 suction intake tube 3/4"ID x 1"1/8OD  
or Ø 20 x 28
- 1 By-pass tube 1/4"ID x 3/8"OD  
or Ø 6 x 9 mm
- 1 strainer
- 1 user's manual
- 1 inlet adaptor + 1 nut to be fitted to  
the turbo block

## **SHIPPING CONTENTS 2**

- 1 supporting legs

## **SHIPPING SIZE 1**

- 22"7/8 x 21"2/3 x 21"1/8  
(58 x 55 x 41 cm)

## **SHIPPING SIZE 2**

- 34"2/3 x 28" x 1/4"  
(88 x 71 x 6 cm)

## **SHIPPING WEIGHT 1**

- 23 kg

## **SHIPPING WEIGHT 2**

- 7 kg

# CHAPTER 1

# INSTALLATION

## RECOMMENDATIONS

### 1 - GENERAL REMARKS

- In a case where the installation is higher than the Proportional Injector unit itself, there is a possible risk of water flowing back through the unit. Installation of a gate valve or non-return valve downstream is recommended.
- Do not install the unit above a corrosive container (risk of fumes attacking the Proportional Injector).
- Do not install the Proportional Injector on the suction side of the supply pump (risk of siphoning).

### 2 - ASSEMBLY SHOULD BE CARRIED OUT WITHOUT TOOLS

### 3 - CLOUDY WATER

In the case of cloudy water, it is **imperative** to install a 300 microns - 50 mesh filter upstream of the unit.

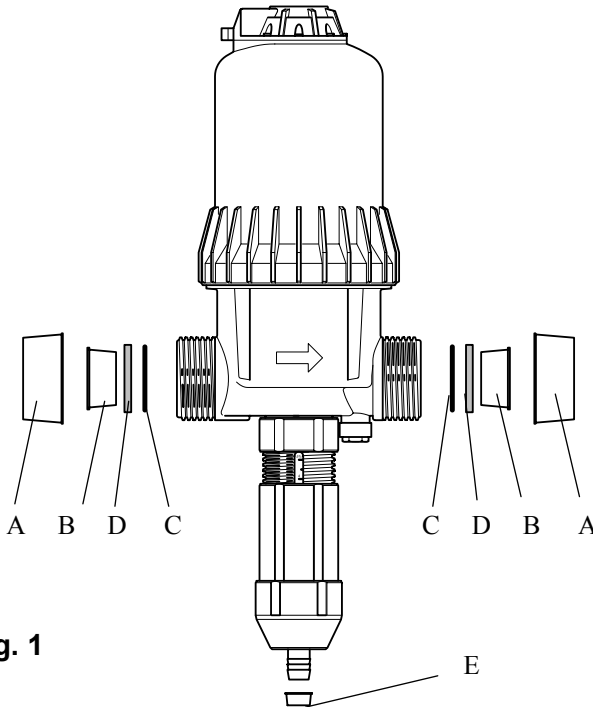
### 4 - WATER HAMMER

Installations subject to water hammer should incorporate a suitable protection device such as a pressure regulator or expansion chamber. For automatic installations, use slow opening solenoid valves. For installations in different sectors, install the valves in cross mode, i.e. as one opens, another one closes.

# ASSEMBLY OF THE D 30 S

ASSEMBLY SHOULD BE CARRIED OUT WITHOUT THE USE OF TOOLS WITH THE EXCEPTION OF THE WRENCH SUPPLIED FOR TIGHTENING THE COUPLINGS.

The assembly of the Proportional Injector should be carried out in the following order :

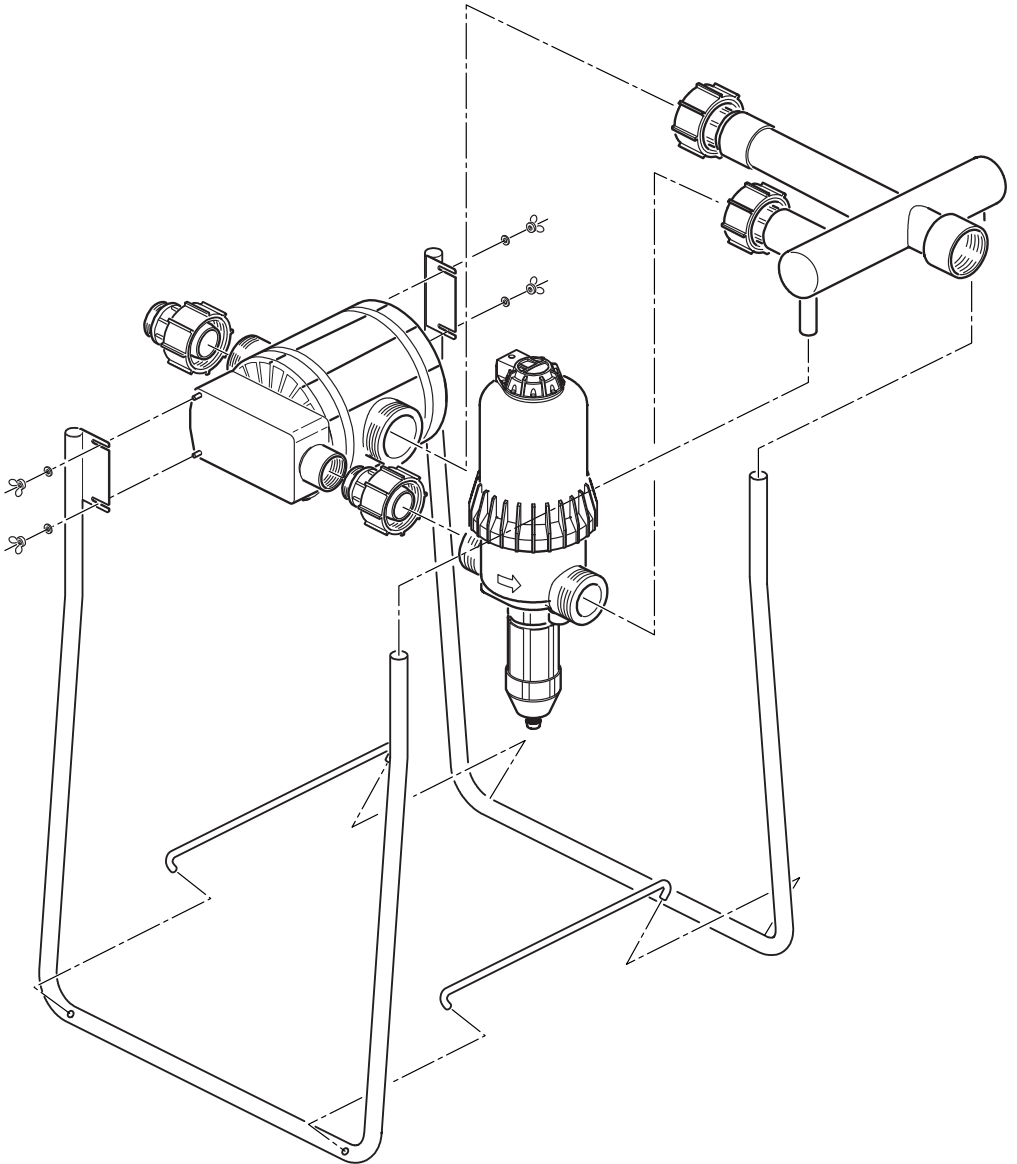


**Fig. 1**

- Remove the red protective caps (types **A & B**) from the Proportional Injector and the turbo block inlets and outlets. Retrieve the spacing rings (**D**) and O-rings (**C**) and fit them on to the inlet and outlet adaptors as shown in **Fig. 1** (fit plastic spacing ring first, rubber O-ring second).

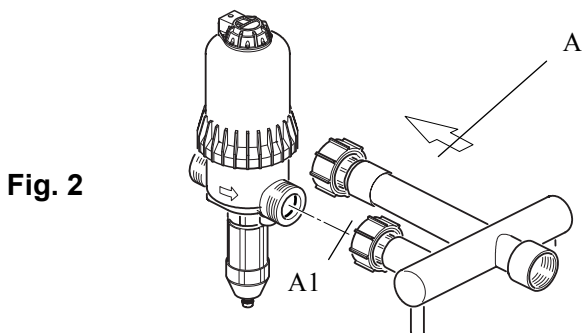
- Remove the protective caps (**Fig. 1 - E**) from the Proportional Injector concentrate intake.

# GENERAL VIEW

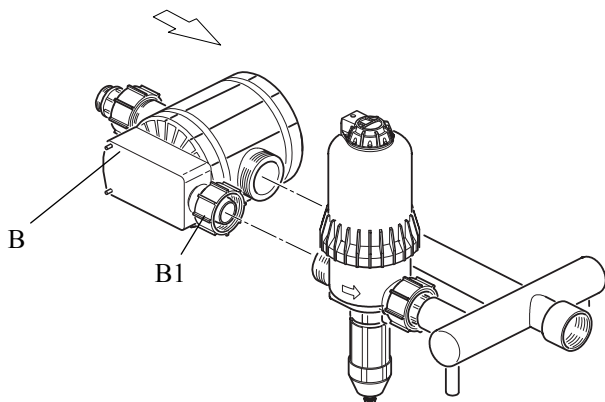




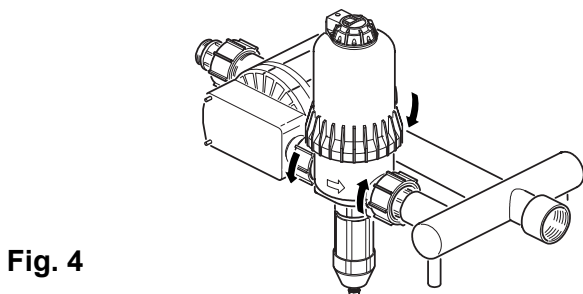
1/ First couple the stainless steel manifold **A** by the adaptor (**Fig. 2 - A1**) to the Proportional Injector water outlet (note direction of arrow or Proportional Injector).



2/ Couple the turbo block **B**, by the adaptor (**Fig. 3 - B1**) to the Proportional Injector water inlet and by the threaded outlet to the manifold.



3/ Tighten the 3 nuts with the wrench supplied.



4/ Fit the support legs (T1 and T2).

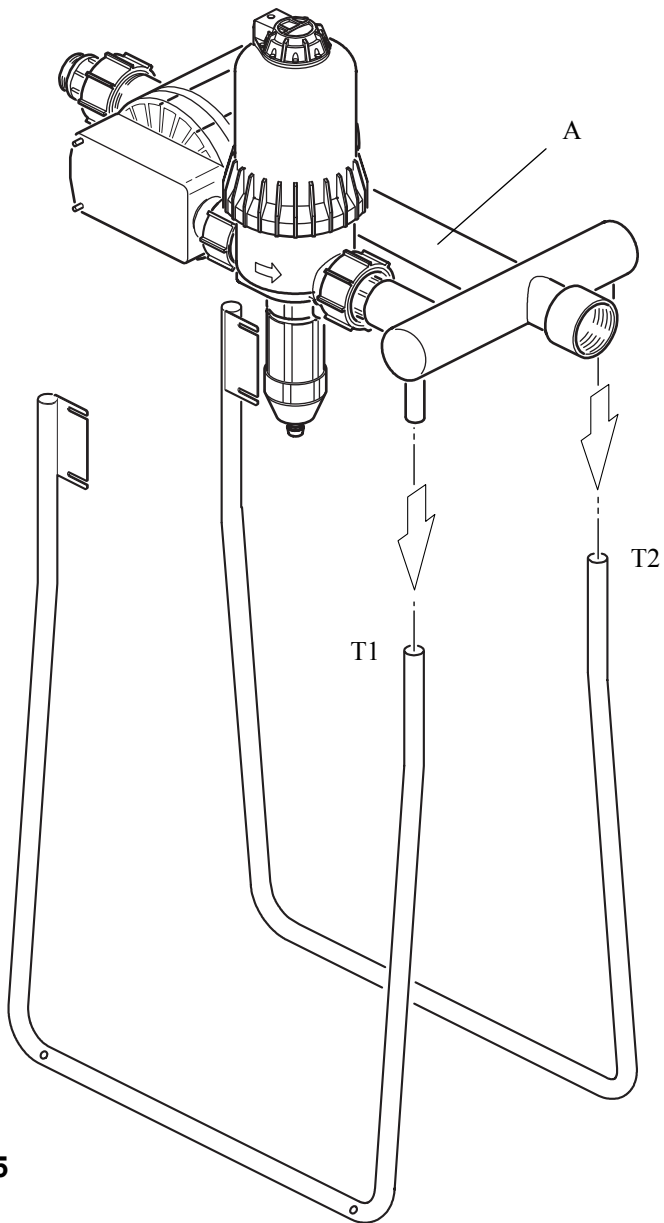
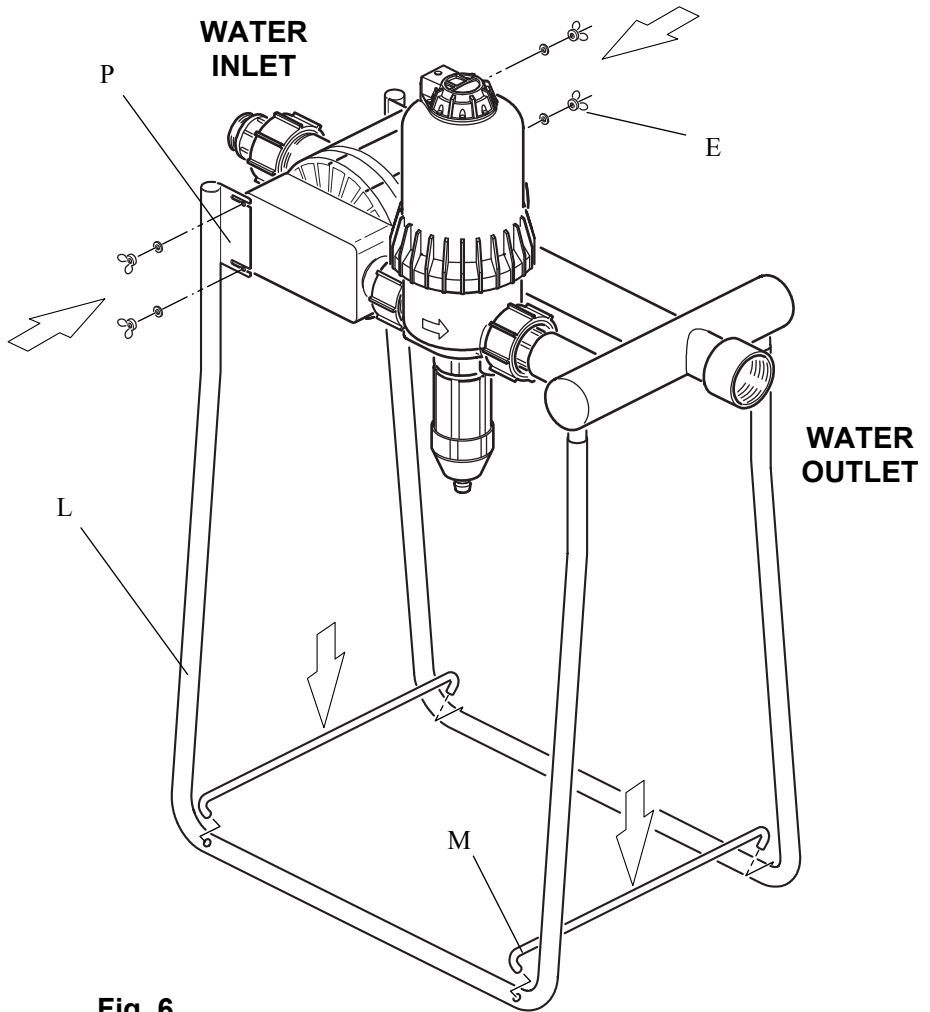


Fig. 5

**5/** Position the fixing plates (**Fig. 6 - P**) on the turbo block, fit the 4 washers and wing nuts and tighten.  
Fit the 2 spacing rods (**Fig. 6 - M**).



**Fig. 6**

# CONNECTING TO THE WATER SUPPLY

**NOTE ! You should obtain and fit the components necessary for connection to the water supply depending on your installation.**

**Connect the unit to the water supply making certain that the water flows in the direction of the arrow on the Proportional Injector body.**

WHEN CONNECTING A SYSTEM EITHER TO THE PUBLIC WATER SUPPLY OR TO ITS OWN WATER SOURCE, YOU MUST RESPECT THE REGULATIONS IN FORCE CONCERNING PROTECTION OF THE SOURCE I.E BACFLOW PREVENTION, ETC.

## ADJUSTING THE DOSAGE RATIO

IMPORTANT ! Use no tools

**RATIO ADJUSTMENTS MUST BE MADE WHEN THERE IS NO PRESSURE  
IN THE UNIT**

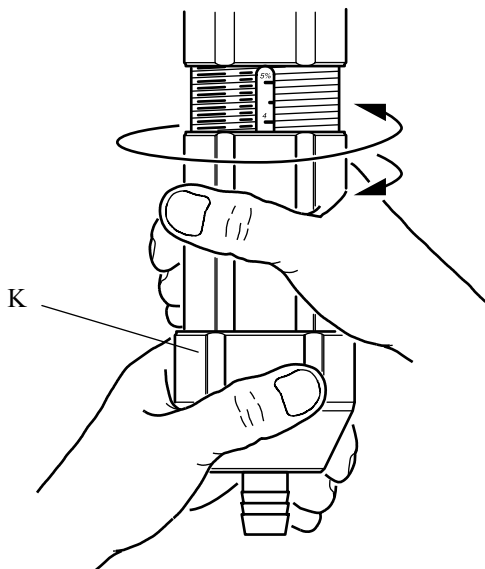


Fig. 7

Hold the lower part of the unit with the left hand and turn the barrel (**Fig. 7 - K**) with the right hand until its upper edge is aligned with the required dosage.

# INCORPORATED HYDRAULIC BY-PASS

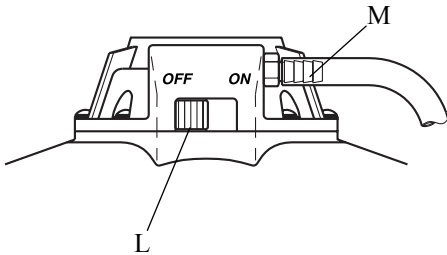
A mechanism to select either the dosing function or the by-pass mode. The control fluid must have a minimum pressure of **12 PSI (0.8 Bar)** in order to operate the by-pass.

**ON** = Injecting function

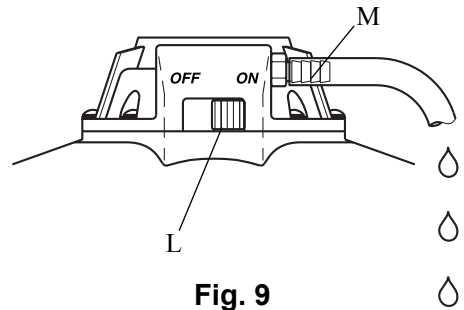
**OFF** = By-pass function

**M** = Barbed fitting

**L** = By-pass lever



**Fig. 8**



**Fig. 9**

## By-pass mode :

- Put the lever (**Fig. 8 - L**) in the *OFF* position.

## Dosing mode :

- Put the lever (**Fig. 9 - L**) in the *ON* position.

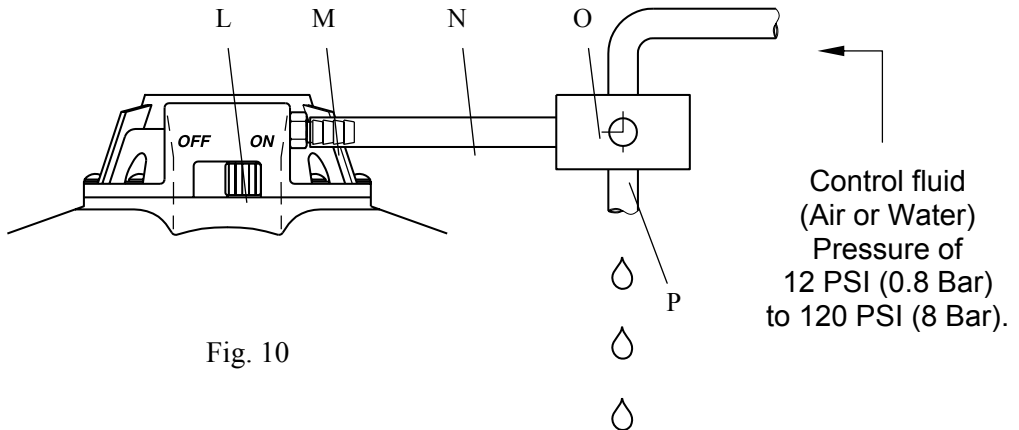
**NOTE :**

- When changing the lever (L) from the *OFF* to the *ON* position, it is normal that a small jet of water escapes from the barbed fitting.
- To stop the injection of the product, when the pressure of your mains is outside the limits of the correct by-pass operation (0.8 Bar to 8 Bar) (12 PSI to 120 PSI), take out the suction pipe from the solution tank.

# AUTOMATIC BY-PASS

**A mechanism to select either the dosing function or the by-pass mode.**  
The control fluid must have a minimum pressure of **12 PSI (0.8 Bar)** in order to operate the by-pass.

- M** = 1/8" barbed fitting (supplied with Proportional Injector)  
**N** = 1/4" ID x 3/8" OD flexible tube  
**OP** = solenoid valve (not supplied with Proportional Injector)



## To operate the automatic by-pass :

- Open the solenoid valve (**Fig. 10 - O**).
- The by-pass control fluid is introduced.
- The Proportional Injector is put into the by-pass mode (injection stops).

## To operate the injection function :

- Close the solenoid valve.
- The control fluid is turned off and the residue flows to waste (**Fig. 10 - P**).
- The injecting function is connected.

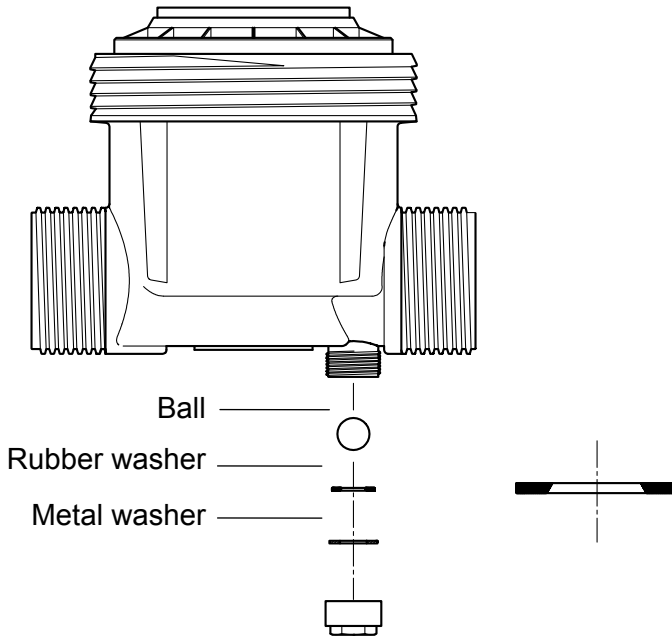
**NOTE :** Using the automatic by-pass, L must be in the **ON** position.

## Automatic anti-siphon valve for additive :

- This automatically recreates normal atmospheric pressure in the Proportional Injector in the event of an accidental vacuum in the line (**Fig. 18 - Q**).

Its use depends on the regulations in force in your country. You must comply with the local water authority's requirements.

- To put it into operation, unscrew the nut (**Item. Q**), remove the solid metal disc and replace it by the washer supplied with the Proportional Injector.



**Fig. 11**





# CHAPTER 2

## PUTTING THE PROPORTIONAL INJECTOR INTO OPERATION

### MAXIMUM FLOW

If your Proportional Injector clicks more than 36 times, that is 18 cycles in 15 seconds, you have exceeded MAXIMUM FLOW.

You should therefore install an Proportional Injector with a higher flow capacity.

# PUTTING THE PROPORTIONAL INJECTOR INTO OPERATION

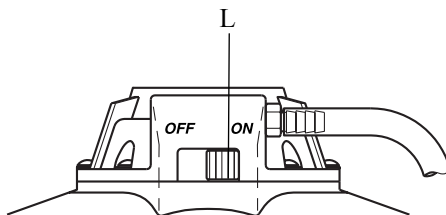


Fig. 12

- Place the by-pass lever in the *ON* position (**Fig. 12 - L**).
- Connect the product suction tube with **strainer** to the Proportional Injector fitting and immerse it in the stock solution tank.
- Slowly turn on the water.

**IMPORTANT !** - Ensure that the strainer is a least 4" (10cm) above the bottom of the tank to avoid sucking up the insoluble particles that may damage the Proportional Injector assembly (**Fig. 13**).

- Do not put the strainer on the ground.

**NOTE :** The time required to prime the unit depends on the rate of water flow.

## WHAT YOU SHOULD DO

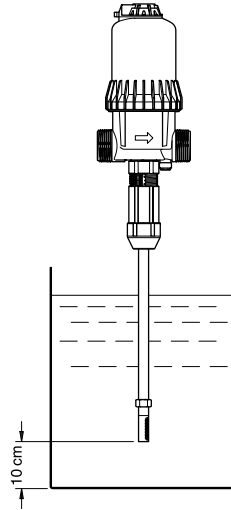
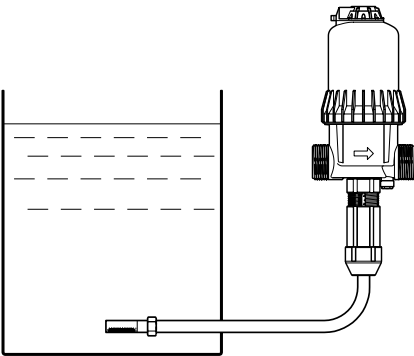


Fig. 13

## WHAT YOU MUST NOT DO

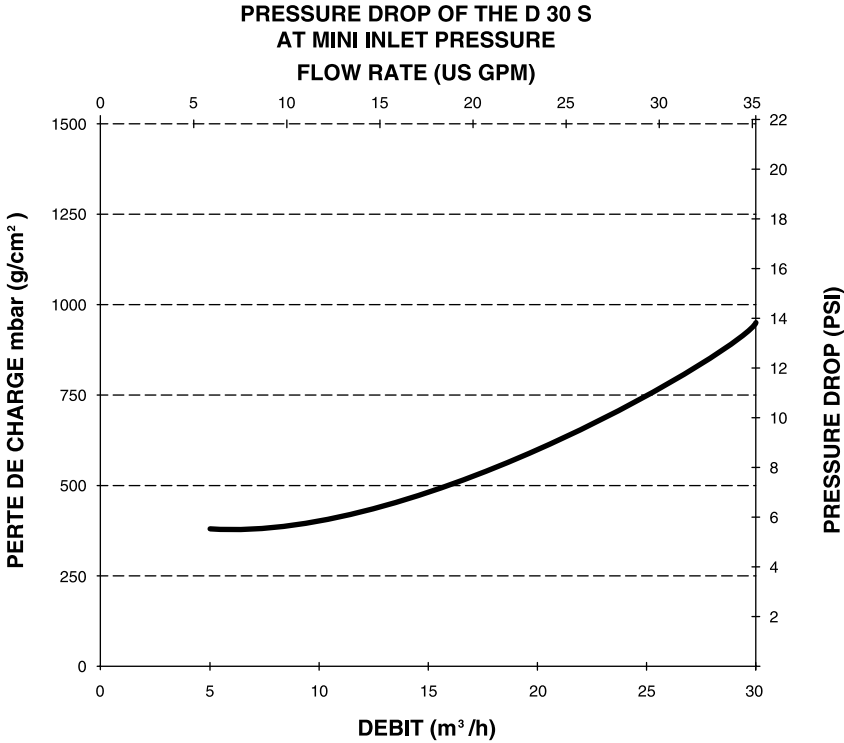


UNDER NO CIRCUMSTANCE SHOULD THE SOLUTION LEVEL BE ABOVE THE DOSATRON PROPORTIONAL INJECTOR WATER INLET LEVEL.

WHEN CONNECTING A SYSTEM EITHER TO THE PUBLIC WATER SUPPLY OR TO ITS OWN WATER SOURCE, YOU MUST RESPECT THE REGULATIONS IN FORCE CONCERNING PROTECTION OF THE SOURCE IF BACKFLOW

Fig. 14

# FLOW/PRESSURE MINI DROP CURVE OF THE D 30 S



# CHAPTER 3

## MAINTENANCE

### RECOMMENDATIONS

- 1 - When using soluble products to be made up into solutions, it is recommended to periodically dismantle the entire injecting portion, copiously rinse it with water and re-assemble it after having previously lubricated the seal with a silicone lubricant **W** (Fig. 15).

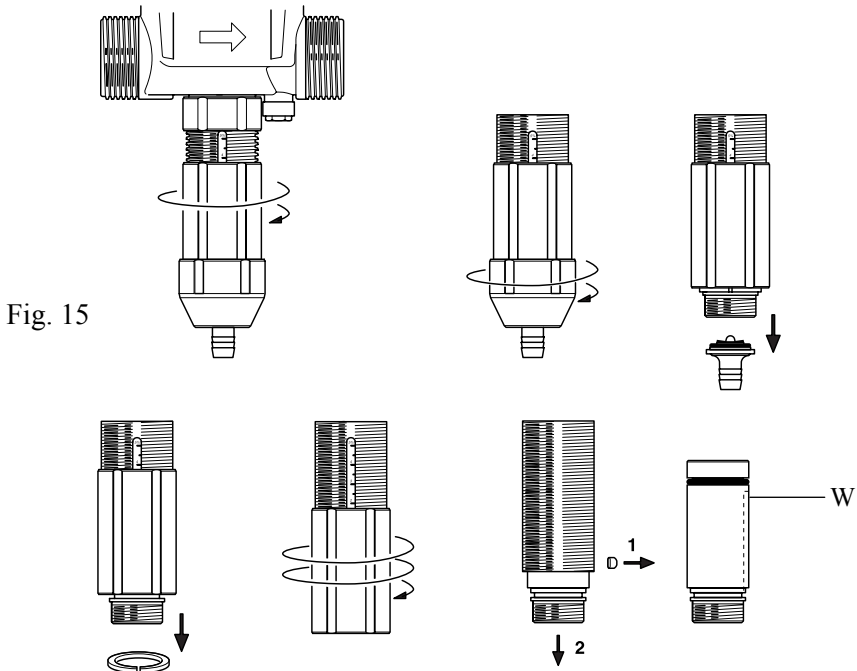


Fig. 15

- 2 - An air inlet, an impurity or a seal's failure can interrupt the injecting function ; periodically check out that the product is correctly drawn up, thus incorporated into the water.

# TO CLEAN THE INCORPORATED FILTER

500 microns - 32 mesh

Frequency : Once per month depending on use.

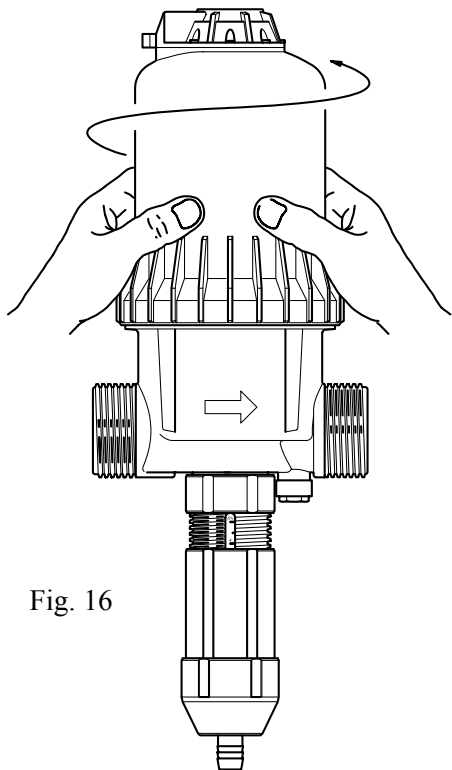


Fig. 16

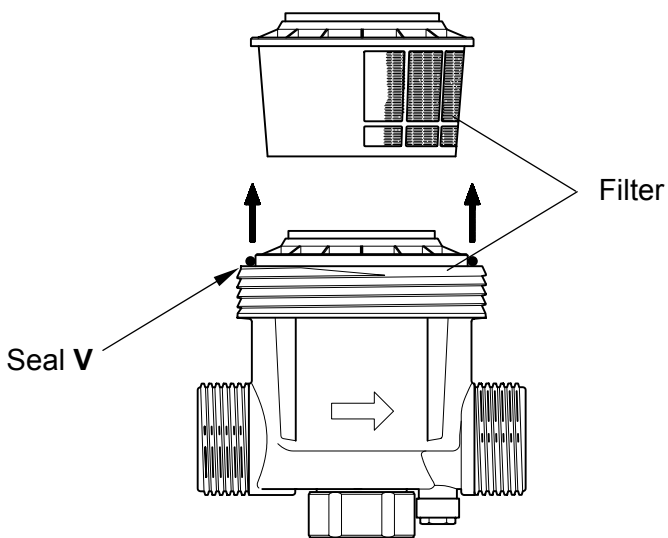


Fig. 17

## **To remove the filter :**

- Close the valve upstream of the unit and allow the pressure to drop.
- Unscrew the bell housing by hand and remove it.  
Note ! Water will flow from bell housing.
- Carefully remove the piston assembly holding it upright (**Fig. 19** - page 22).
- Remove the seal **V** (**Fig. 17** - page 20).
- Remove the filter.
- Clean it and rinse in clear water.

## **To reassemble the filter :**

- Before re-assembly ensure that the filter supports and seal **V** are clean and free of foreign bodies.
- **Apply silicone grease to the thread on the body.**
- **Then proceed in reverse order to the above.**

**IMPORTANT : IN ALL CASES TIGHTENING MUST BE DONE BY HAND.**



# HOW TO DRAIN THE UNIT

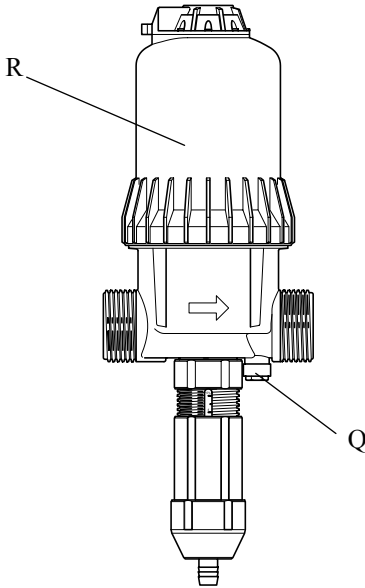


Fig. 18

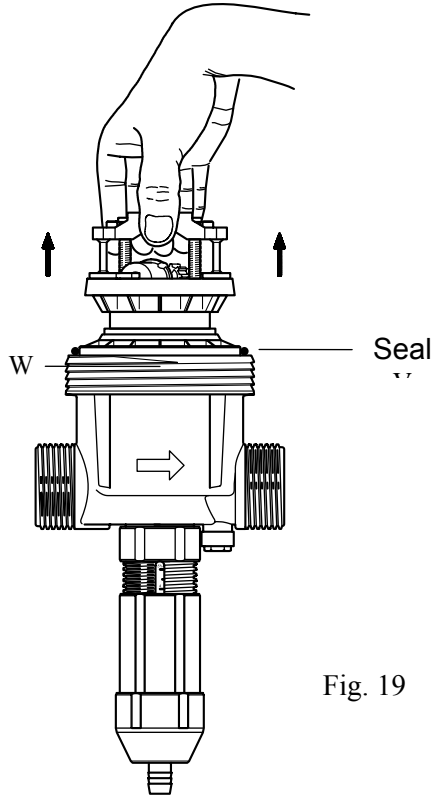


Fig. 19

## (In case of frost risks)

1/ Close the valve upstream of the unit.

2/ Allow the pressure to drop.

3/ Close the valve downstream of the unit.

4/ Once the valves upstream and downstream of the unit have been shut off :

- Unscrew the bell housing by hand (**Fig. 18 - Rep. R**), and remove it.
- Lift out the piston assembly taking care to hold it upright (**Fig. 19**) so that the plunger seal (**Fig. 22 - Rep. Y**) engages correctly in the sleeve. If the seal does not engage in the sleeve, refer to the procedure for dismantling the dosing assembly (**Fig. 19**).
- Empty the body by turning upside down (**Fig. 19 - Rep. W**).
- Draining is now completed and the unit can be reassembled, having first lubricated the thread on the body with silicone grease.

# CHANGING SEALS IN THE INJECTOR ASSEMBLY

(White part)

IMPORTANT ! Use no tools

## 1 - CHANGING THE PISTON PLUNGER SEAL

a/ Unscrew the bell housing by hand and remove it (Fig. 20).

b/ Remove the piston assembly holding it upright (Fig. 21).

c/ Remove the seal Y (Fig. 22 - page 24).

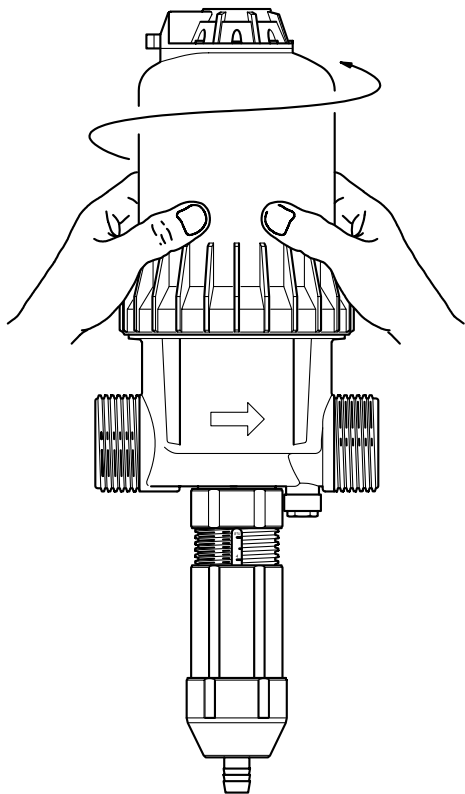


Fig. 20

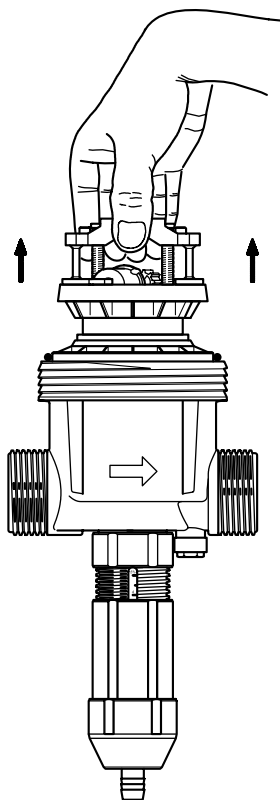
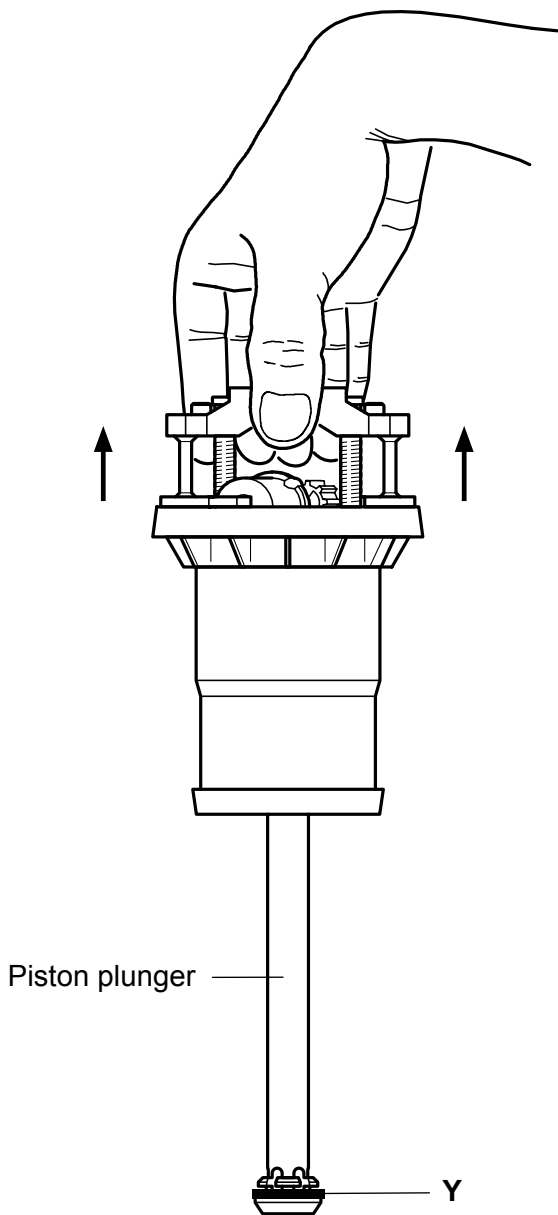


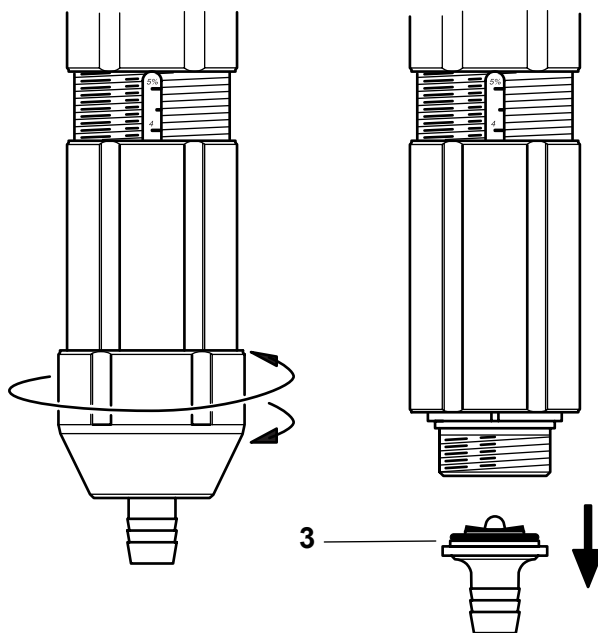
Fig. 21



- If it is found necessary to remove the piston plunger, pay attention when replacing it to screw it in until you reach a stop, and not to overtighten it. There should be some play in the plunger allowing it to be easily inserted into the Proportional Injector body.

Fig. 22

## 2 - CLEANING AND RE-ASSEMBLING OF THE SUCTION VALVE



- Unscrew the black nut and pull downwards to release the valve.
- Change the flat valve seal.
- Change also the O-ring (item 3).

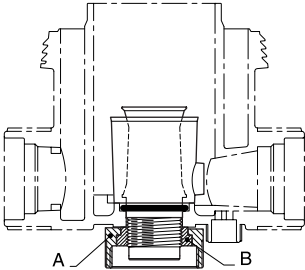
# FAULT FINDING

FAULTS	DIAGNOSIS	REMEDIES
<p><b>1 - MOTOR INCIDENTS</b></p> <p>YOUR PROPORTIONAL INJECTOR DOES NOT START OR STOP</p>		<p>Check that your installation allows a correct operation of Proportional Injector. e.g. direction of flow.</p>
		<p>Check that the water is ON or that the solenoid valves are energised (switched on).</p>
	<p>The by-pass is either closed or half opened.</p>	<p>Open the by-pass (page 11).</p>
	<p>Clogged up filter.</p>	<p>Clean up the filter (see page 20).</p>
	<p>Maximum flow exceeded.</p>	<p>Unscrew the bell housing. Remove the piston and ensure that the 2 lower valve seals and the 4 higher valves seals are in their correct positions. Reduce the flow, and put again into operation.</p>
<p>THE PROPORTIONAL INJECTOR WORKS IN SPIITE OF USING THE BY-PASS (STOP OF THE INJECTING SOLUTION)</p>	<p>The pressure of your mains system, after the Proportional Injector, is inferior to 12 PSI before it. The flow is higher than the maximum flow.</p>	<p>Increase the pressure (110 PSI max.) or set up the Proportional Injector in by-pass mode with isolating valves.</p>
<p>PLUNGER DETACHED FROM THE PISTON MOTOR</p>	<p>Too high pressure.</p>	<p>Fit a new plunger.</p>

FAULTS	DIAGNOSIS	REMEDIES
<p><b>2 - DOSING INCIDENTS</b></p> <p>WATER FLOWING BACK INTO THE SOLUTION TANK</p>	<p>Worn out or contaminated seals.</p>	<p>Clean or change the suction valve (see p. 25).</p>
<p>NO SUCTION OF PRODUCT OR UNDER DOSING</p>	<p>The hydraulic motor is stopped.</p>	<p>See above Chapter <b>MOTOR INCIDENTS</b> (page 28).</p>
	<p>Check out the suction height. Important ! The limit is 4 m (13 feet).</p>	<p>Reduce it if necessary.</p>
	<p>Air inlet in the suction pipe.</p>	<p>Check the tightness of the black nut at the lower end of the Proportional Injector body and the clamp ring on the suction intake tube.</p>
	<p>Blocked suction tube or clogged up strainer.</p>	<p>Clean these items Important : Avoid putting the strainer at the bottom of the drum. Always leave a minimum of 10 cm (4").</p>
	<p>Suction of air. Maximum flow exceeded. Worn plunger or plunger seal. Worn Proportional Injector body.</p>	<p>Reduce the flow. Change. Change.</p>

**IMPORTANT !**

**In case of leaks between the pump body (blue) and the Proportional Injector body see page 28 – LEAKS.**

FAULTS	DIAGNOSIS	REMEDIES
<p><b>3 - LEAKS</b></p> <p>LEAKS BETWEEN THE (BLUE) BODY AND THE PROPORTIONAL INJECTOR BODY</p>	<p>Watertight seal is badly positioned.</p> 	<p>Check the seal :</p> <p>Hold the black nut (item <b>A</b>) to prevent its turning and unscrew the sleeve loosen the interior screw (item <b>B</b>).</p> <p>Note ! Take care to align the components when re-assembling.</p>
<p>LEAKS BETWEEN THE BODY AND THE BELL HOUSING</p>	<p>Seal <b>V</b> absent or badly positioned (see <b>Fig. 17</b> - page 20)</p>	<p>Remove the bell housing, clean the seal seating and put back the seal.</p> <p>Apply silicone grease to the thread and screw on the bell housing keeping it upright.</p>
<p>CONNECTION LEAKS</p>	<p>Seal is badly positioned or cut.</p>	<p>Position it correctly or replace it.</p>
	<p>Pipe is not correctly inserted.</p>	<p>Insert it correctly.</p>

## **DOSATRON INTERNATIONAL**

**DECLINES ALL RESPONSIBILITY IF THE PROPORTIONAL INJECTOR IS USED UNDER CONDITIONS OUTSIDE OF ITS OPERATING TOLERANCE AS INDICATED HEREIN.**

This document does not form a contractual engagement on the part of **DOSATRON INTERNATIONAL** and is for information only.  
The company reserves the right to alter product specification or appearance without prior notice.

## **WARRANTY**

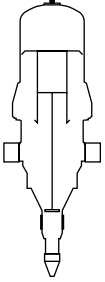
***DOSATRON INTERNATIONAL***, will replace any part considered as originally defective during the first 12 months from the date of purchase.

**This guarantee will operate provided that the faults noted do not come from a defective installation or misuse of the Proportional Injector.**

**Any damage caused by the use of a tool will not be covered by the manufacturer's warranty.**



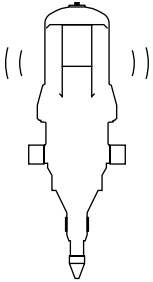
# KNOW YOUR FLOW.....A SIMPLE METHOD



## THE DOSER IS COMPOSED OF :

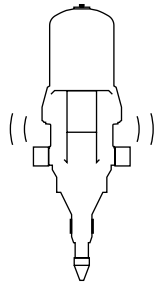
- A driving volumetric hydraulic piston motor.
- A dosing piston.

The speed rhythm of the motor is proportional to the flow of water passing through the system. Thus the rate of injection will likewise remain proportional. In its reciprocating motion the piston motor « clicks ».



Once in the up position

Once in the down position



**SMALL MODEL** : Count the number of clicks in 90 seconds x 10  
= Flow of water in litres/hour.



**D 30 S MODEL** : Count the number of clicks in 30 seconds x 400  
= Flow of water in litres/hour.



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PATENTED PRODUCTS

