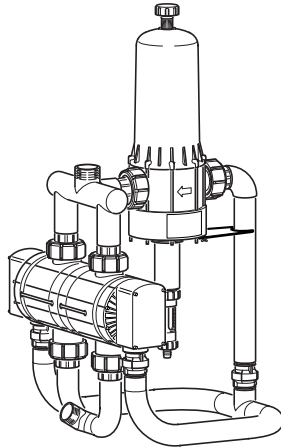


PROPORTIONAL INJECTOR D 60 S
OWNER'S MANUAL

SUMMARY



CHAPTER 1 INSTALLATION	PAGE 3
CHAPTER 2 PUTTING THE PROPORTIONAL INJECTOR INTO OPERATION	PAGE 11
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SPECIFICATIONS

- Practical operating **flow range** : **10 to 60 m³/h**
- Operating **pressure** : **2 to 115 PSI** (0.15 Bar to 8 Bar) for a temperature lower than **40° C** (104° F)

- Adjustable **ratios** : **1:1000 to 1:143** (0.1% to 0.7%)

- Mesh filter at water inlet

- Mixing chamber

- By-pass

incorporated

Pipe connections : Inlet **2"½** male thread
Maximum operating temperature : 40° C (104° F)

UNIT SIZE

- L. 62 X I. 66 X H. 127 cm

Weight : 50 kg

SHIPPING CONTENTS 1

- 1 Proportional 20 m³/h Injector
- 1 suction intake tube 3/4"ID x 1"1/8 OD (∅ 20 x 28)
- 1 vacuum-breaker valve + connecting nipple
- 1 strainer
- 1 owner's manual

SHIPPING SIZE 1

- 1.00 x 0.43 x 0.34 m
0.44 m

SHIPPING WEIGHT 1

- 22 kg

SHIPPING CONTENTS

- 1 bi-block turbo
- 1 set of pipework
- 1 anti-rotation plate
+ screws
- 1 « universal » wrench
- 1 elbow

SHIPPING SIZE 2

- 0.61 X 0.66 X

SHIPPING WEIGHT 2

- 43 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 liquid container (risk of fumes attacking the injector).
- Do not install the injector on the suction side of the supply pump (risk of siphoning).
- The injector should be protected from frost and from sources of excessive heat.

2 - ASSEMBLY SHOULD BE CARRIED OUT WITHOUT TOOLS

Except for fitting the vacuum breaker valve (for which a spanner or wrench will be required) and the suction intake tube (screwdriver).

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 D60 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 injector should be carried out in the following order :

- Remove the protective caps from the water inlet and outlet of the injector and bi-turbo block, from the injector concentrate intake (**Fig. 1 - A**) and from the body (**Fig. 1 - B**).

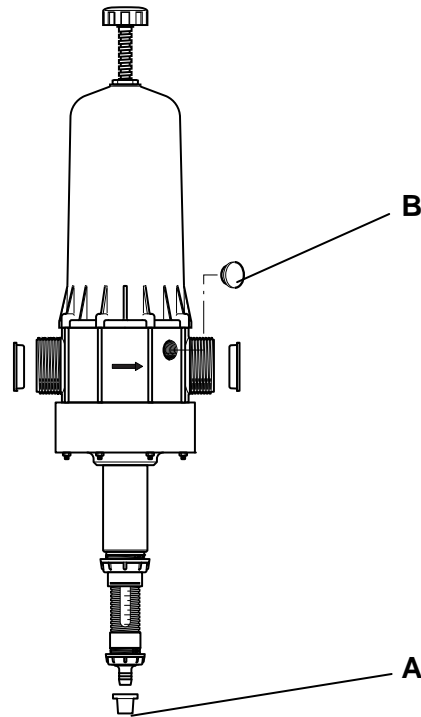


Fig. 1

GENERAL VIEW

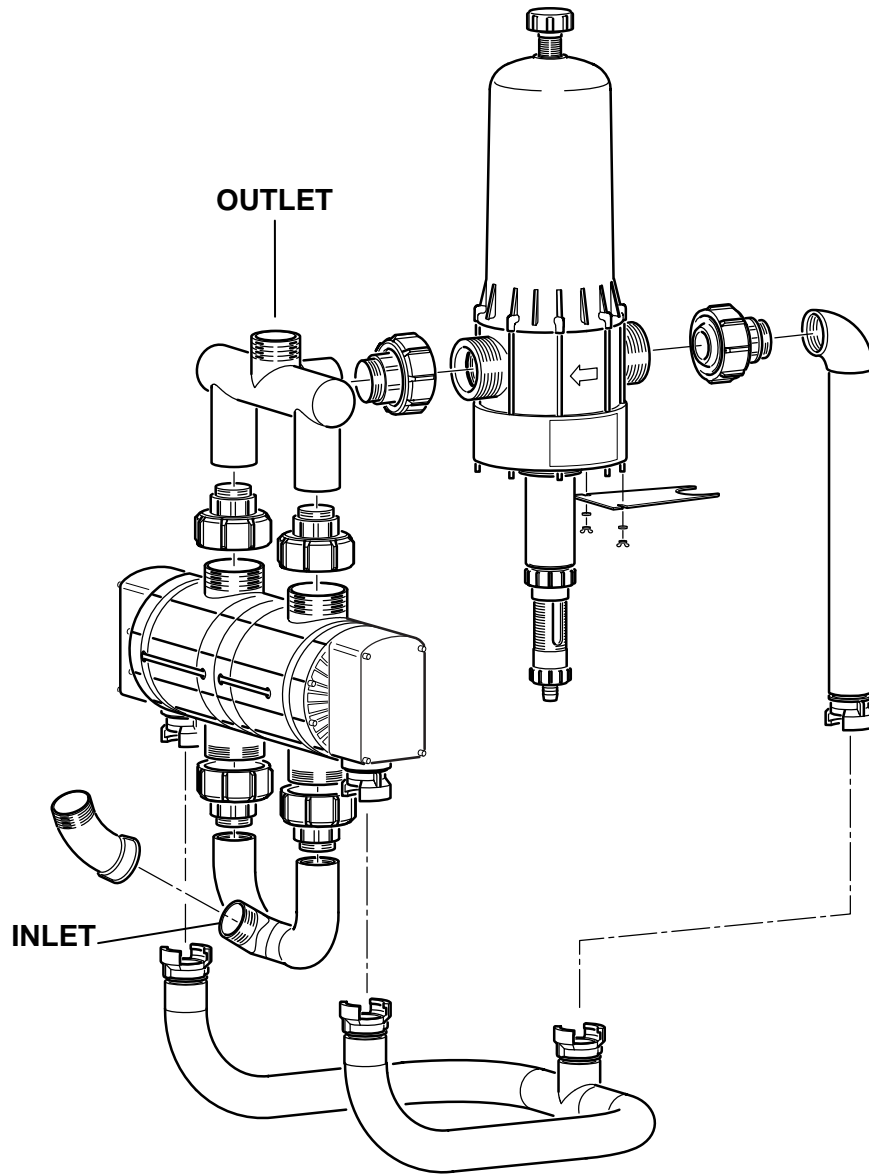


Fig. 2

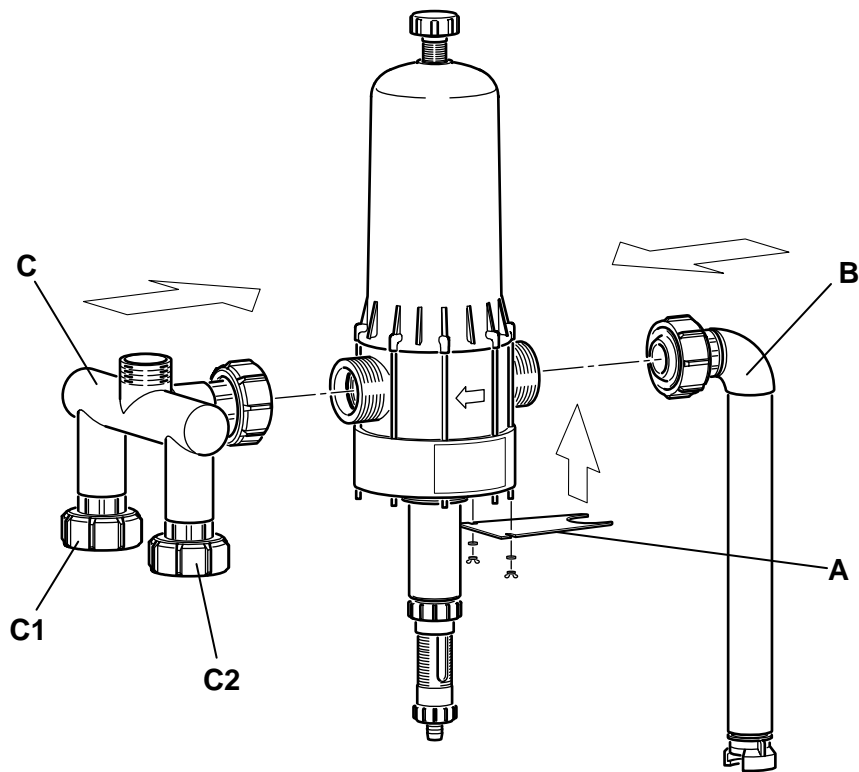


Fig. 3

- 1/** Fit the anti-rotation plate (**Fig. 3 - A**) to the injector using the wing-nuts and washers supplied.
- 2/** Fit the injector inlet tube (**Fig. 3 - B**) to the injector inlet (note direction of arrow or injector).
- 3/** Fit the stainless outlet manifold (**Fig. 3 - C**) to the injector outlet with the 2 coupling nuts pointing downwards (**Fig. 3 - C1 and C2**).

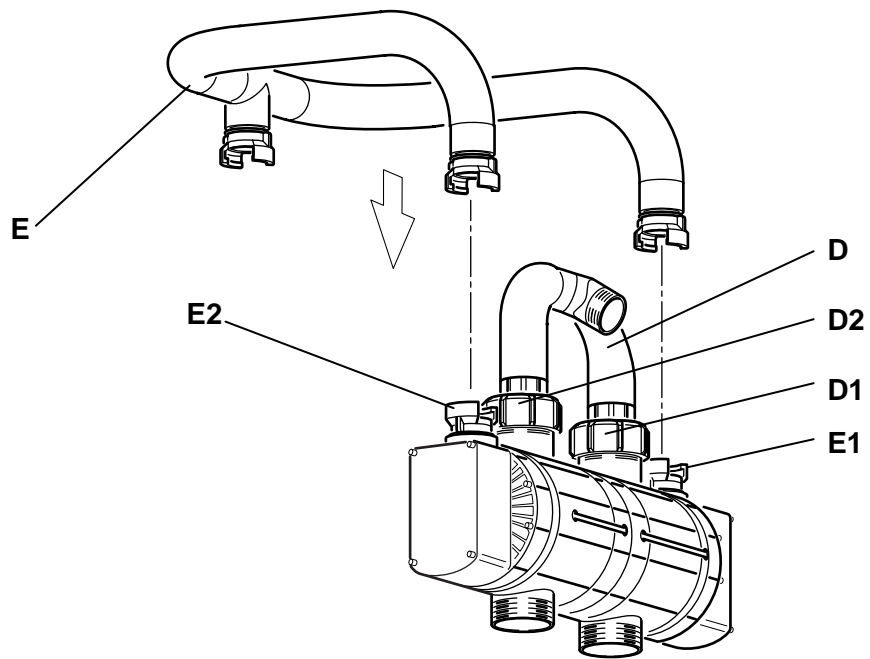


Fig. 4

- 4/** Turn the bi-turbo block so as to fit the inlet manifold (**Fig. 4 - D**) from above to the inlets (**Fig. 4 - D1 and D2**).
- 5/** Keeping the block in this position, fit the tube assembly (**Fig.4 - E**) by engaging the 2 fire hose couplings (**Fig. 4 - E1 and E2**).

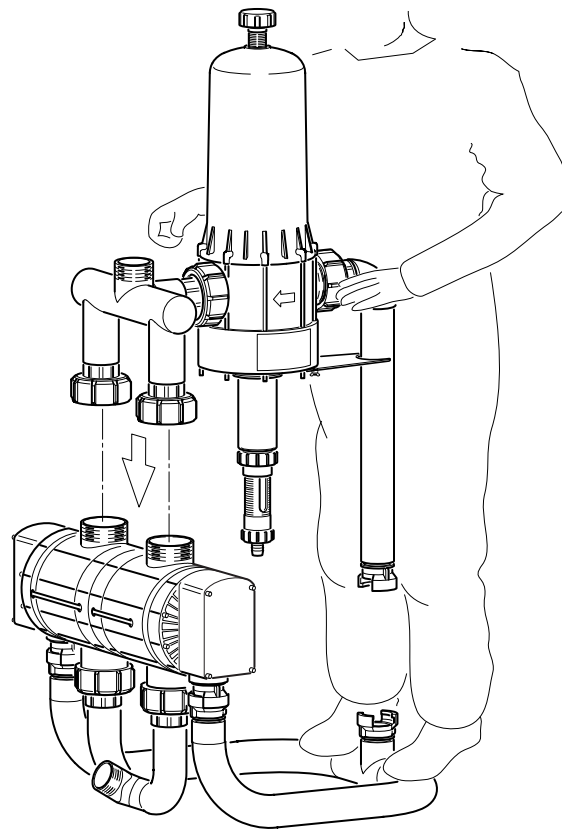


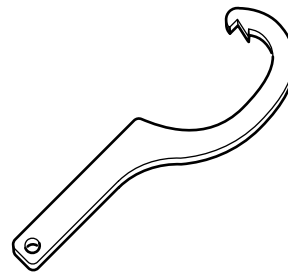
Fig. 5

6/ Turn the bi-turbo block assembly over and fit the injector assembly (**Fig. 5**).

NOTE ! To solve the problem of stability during this operation, the operative should adopt the position shown in **Fig. 5**.

Once all the components are assembled, tighten the nuts using the «universal» wrench supplied (**Fig.6**).

Fig. 6



NOTE ! An extra elbow is supplied which may, if necessary be connected to the inlet manifold depending on your installation (**Fig. 7 - F**).

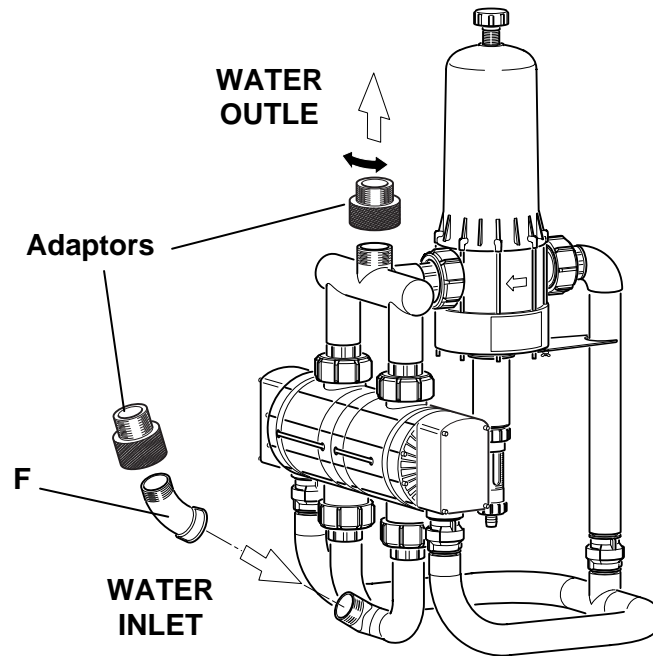


Fig. 7

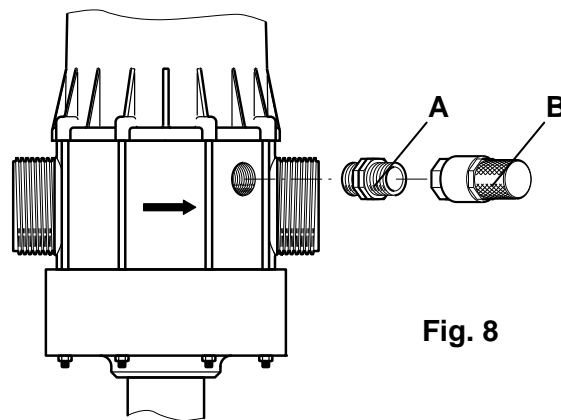


Fig. 8

- Wrap several turns of P.T.F.E. (teflon) tape round the threads of the adaptor nipple (**Fig. 8 - A**).
- Screw the nipple into the vacuum-breaker valve (**Fig. 8 - B**).
- Screw the assembly into the body (**Fig. 8**).

CONNECTING TO THE WATER SUPPLY

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

When connecting the injector to the water supply, be sure the water flows in the direction indicated by the red labels on the unit.

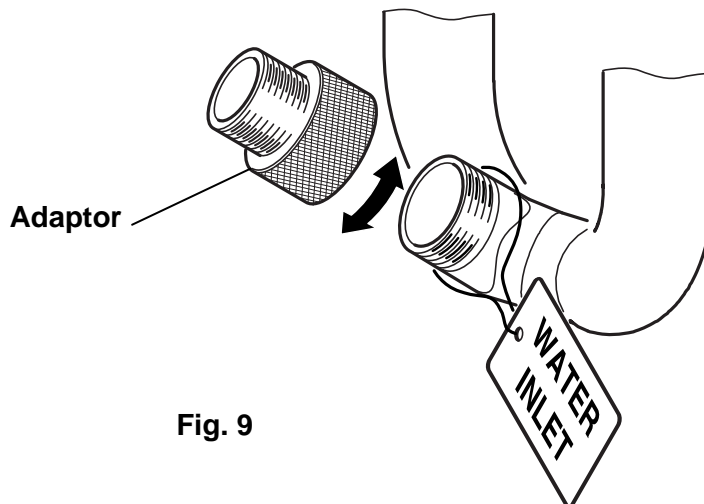


Fig. 9

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.

CHAPTER 2

PUTTING THE PROPORTIONAL INJECTOR INTO OPERATION

RECOMMENDATIONS

MAXIMUM FLOW LIMIT.

If your injector clicks more than **32 times**, that is **16 cycles** in **15 seconds**, you have exceeded MAXIMUM FLOW.

PUTTING THE INJECTOR INTO OPERATION

- Screw the by-pass knob halfway down.
- Connect the suction tube fitted with its strainer to the injector and immerse it in the stock solution tank.

IMPORTANT ! : - Ensure that the strainer is a least 4" (10 cm) above the bottom of the tank to avoid sucking up the insoluble particles that may damage the injector assembly (Fig. 11).

- **Do not put the strainer on the ground.**
- **Slowly** turn on the water.
- As soon as water is seen to flow from around the screw thread of the by-pass knob, fully unscrew the knob.
- Ensure that the suction intake tube is correctly fastened to the barbed fitting so as to be airtight.

ADJUSTING THE DOSAGE RATIO

IMPORTANT ! Use no tools

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

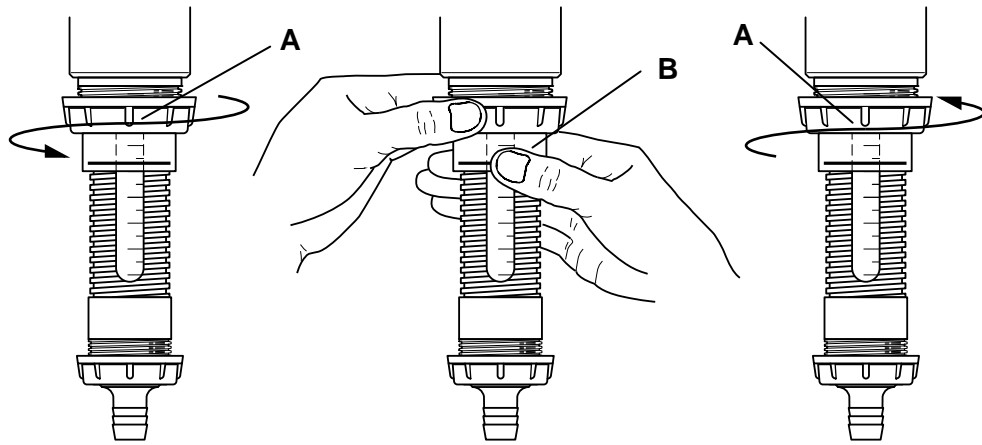


Fig. 10a

Fig. 10b

Fig. 10c

1/ Loosen the nut (**Fig. 10a - A**).

2/ Hold it while screwing or unscrewing the transparent nut (**Fig. 10b - B**).

3/ Align the black line on the transparent nut with the required injection ratio indicated on the graduated scale.

4/ Tighten the nut (**Fig. 10c - A**).

- The time required to prime the unit depends on the rate of water flow. To purge the air from the suction tube, set the injection rate at 0.7 % before starting.

Once the unit is primed, adjust to the required injection ratio. Pressure at zero in the installation.

WHAT YOU SHOULD DO

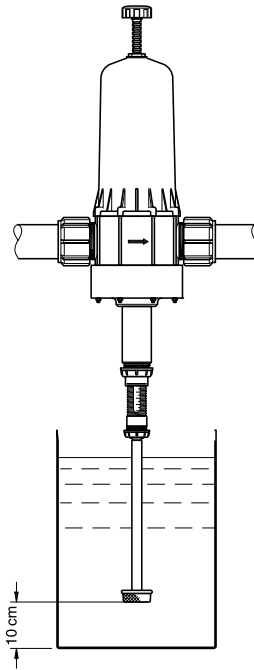
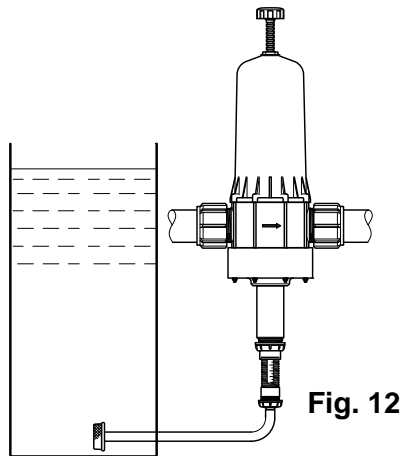


Fig. 11

WHAT YOU MUST NOT DO



UNDER NO CIRCUMSTANCE SHOULD THE SOLUTION LEVEL BE ABOVE THE DOSATRON 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

INCORPORATED BY-PASS :

A mechanism to either start or stop the injection of the stock solution.

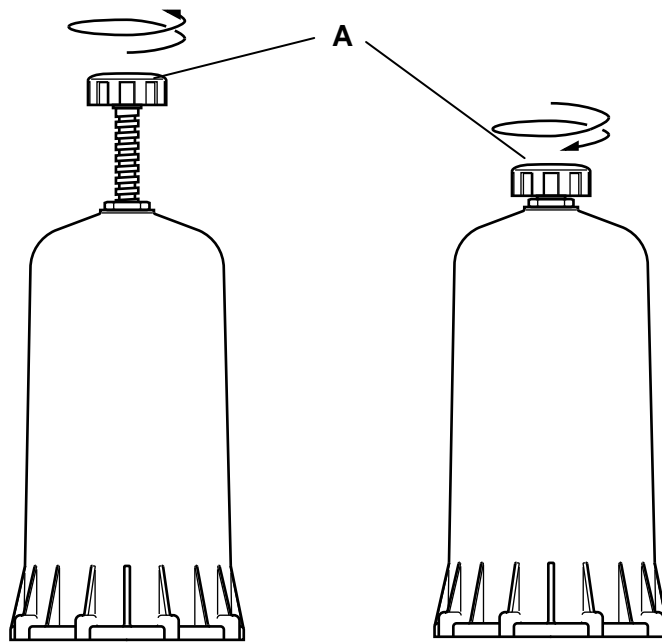


Fig. 13a

Fig. 13b

Injection mode :

- Unscrew fully the by-pass knob on the top of the unit.
- The hydraulic motor is set in motion and a noticeable « clicking » noise can be heard (**Fig. 13a - A**).

By-pass mode :

- Screw down the by-pass knob as far as possible.
- The injection stops (no motor noise). The water continues to pass through the unit (**Fig. 13b - A**).

NOTE ! It is normal that water leaks from around the by-pass knob thread in the intermediate position.

FROST PRECAUTIONS

The unit must be protected from frost : It should be taken inside a place of shelter.

HOW TO DRAIN THE UNIT

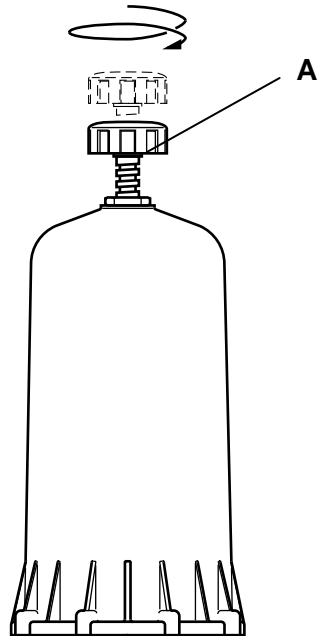


Fig. 14

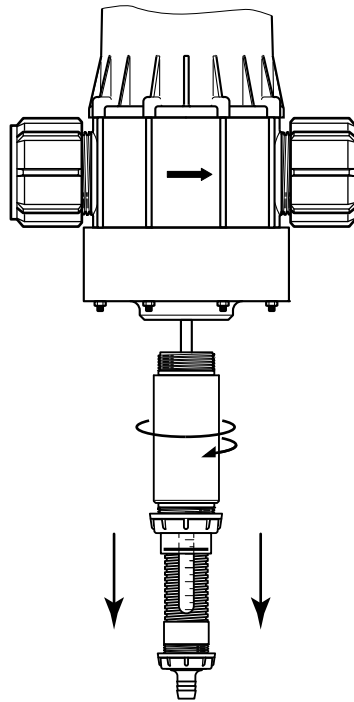
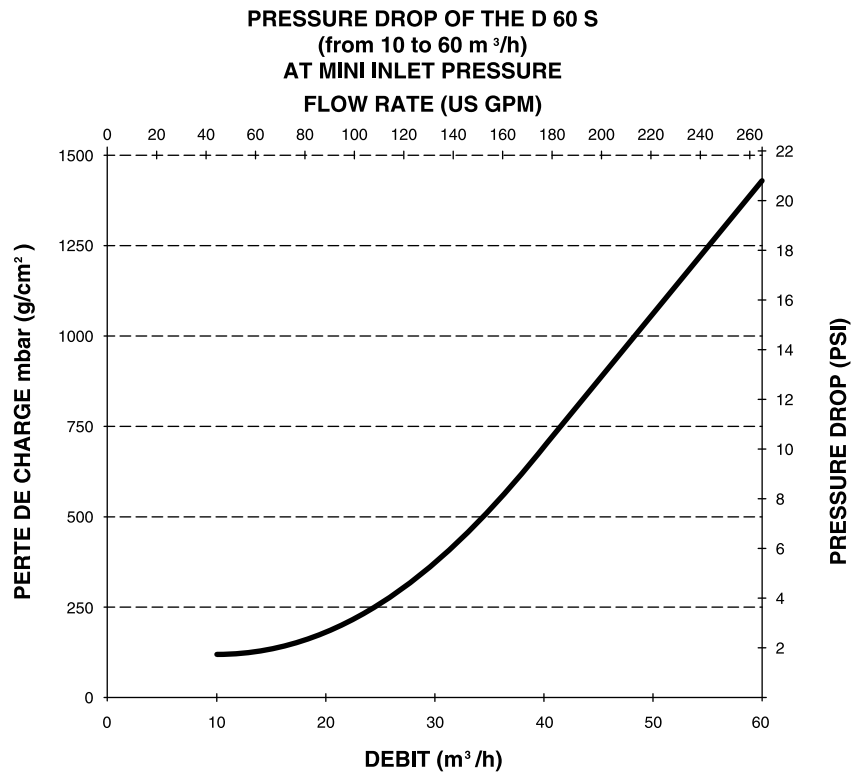


Fig. 15

- 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 :
 - Screw the by-pass knob halfway down (**Fig. 14 - A**).
 - Unscrew and remove the injection assembly (**Fig. 15**).

FLOW/PRESSURE MINI DROP CURVE OF THE D 60 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 **A** (Fig. 16 b).

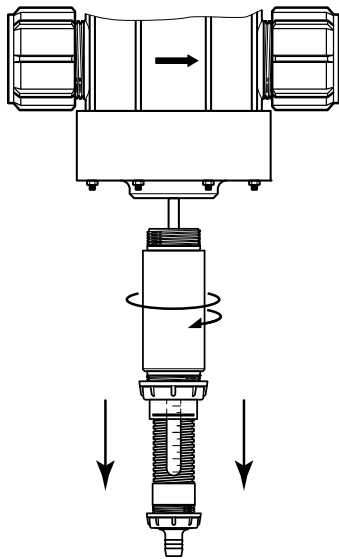


Fig. 16a

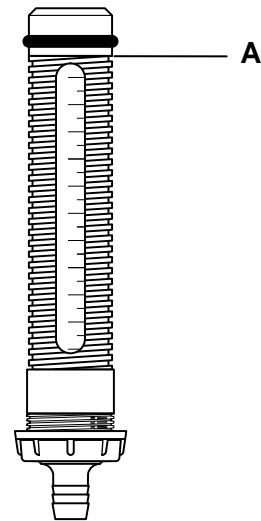


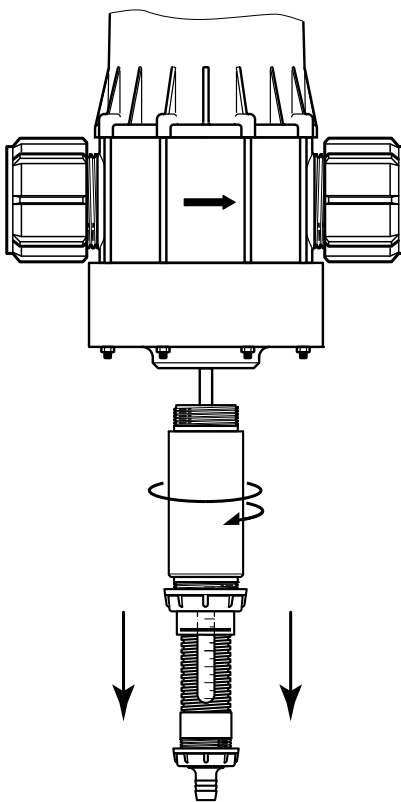
Fig. 16b

- 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.

CHANGING SEALS IN THE INJECTION

IMPORTANT ! Use no tools

1 - CHANGING THE PISTON PLUNGER SEAL



- Unscrew and remove the injection assembly. **Fig. 17**

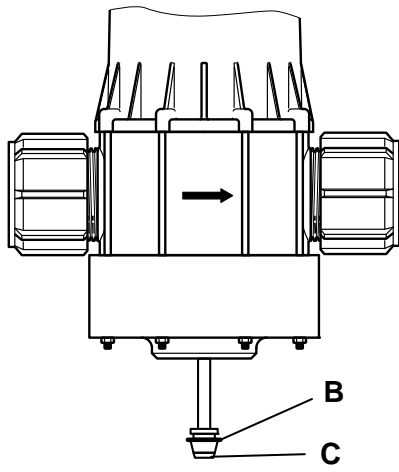


Fig. 18

- Change the seal **B** and the O-ring **C** (Fig. 18).

- Replace the injection assembly (Fig. 19).

Take care not to damage the screw thread !

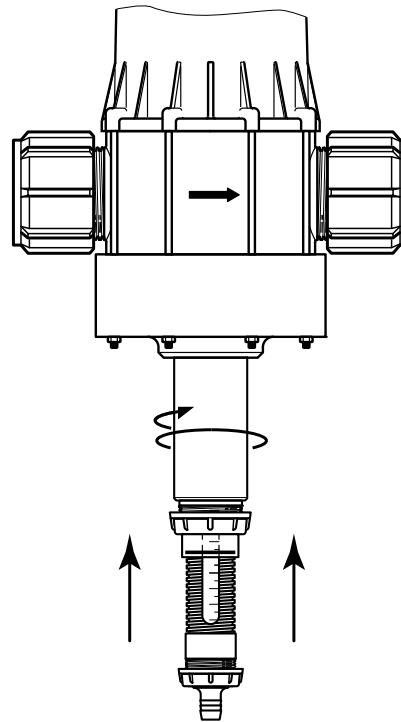


Fig. 19

2 - CHANGING SUCTION VALVE SEALS

1/ Unscrew the black plastic nut (Fig. 20 - K) and pull down-wards to remove the valve assembly (Fig. 21).

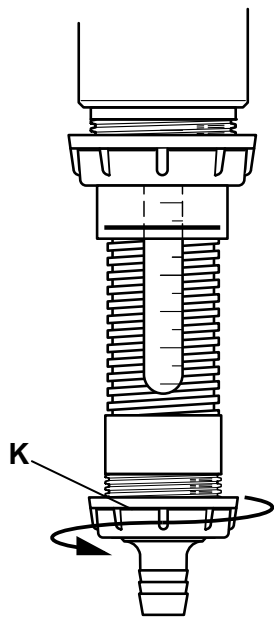


Fig. 20

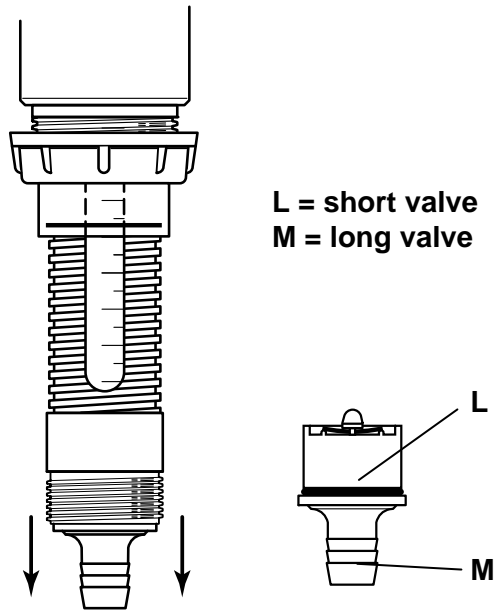


Fig. 21

2/ Remove the seal D at the top of the short valve (Fig. 22) and replace it ; to position it correctly hold it as shown in (Fig. 23), and turn it around the valve nipple until it seats in position underneath it. Take care not to damage the circular ridge against which the seal closes.

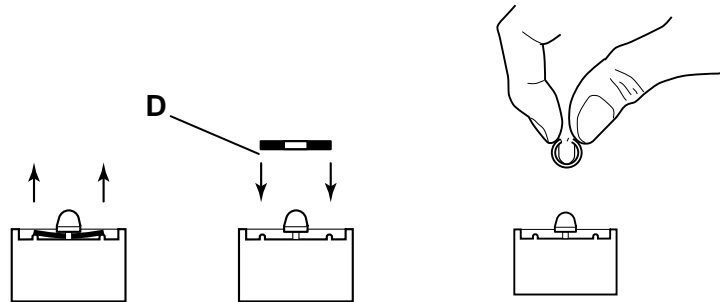


Fig. 22

Fig. 23

3/ Change the seal (**Fig. 24 - E**) of the long valve in the same way as for the short valve.

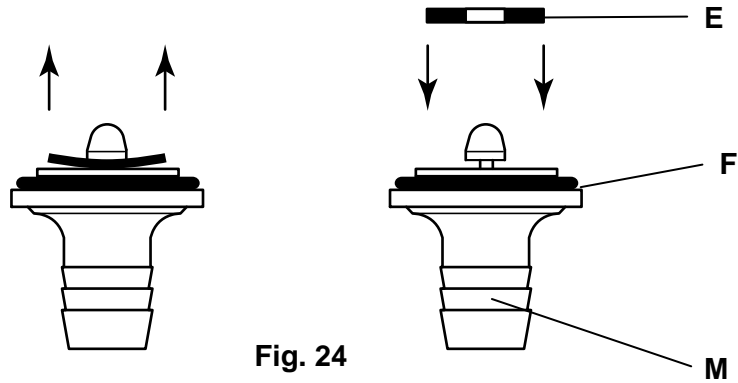


Fig. 24

- Change the O-ring **F**.

RE-ASSEMBLY

- Insert the short valve **L** into the injector body (**Fig.25**), followed by the long valve **M**.
- Screw on the black nut **K** (**Fig. 26**).

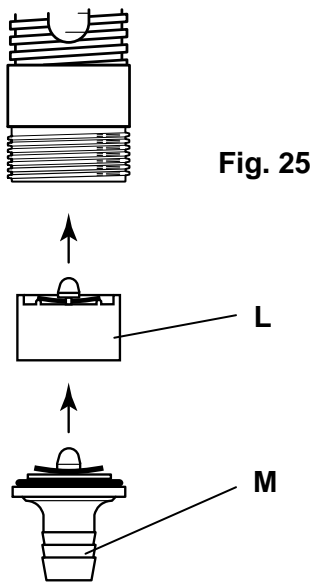


Fig. 25

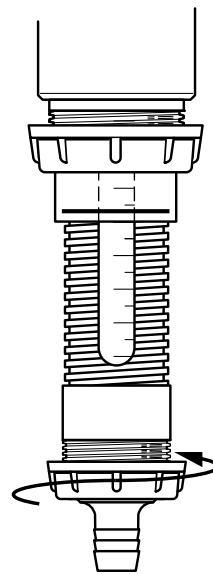


Fig. 26

FAULT FINDING

FAULTS	DIAGNOSIS	REMEDIES
<p>1 - MOTOR INCIDENTS</p> <p>YOUR INJECTOR DOES NOT START OR STOPS</p>		<p>Check that your installation allows correct operation of the 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 air has not been bled from the unit.</p>	<p>See Chapter PUTTING THE PROPORTIONAL INJECTOR INTO OPERATION page 12.</p>
	<p>The by-pass is either closed or half opened.</p>	<p>Open the by-pass (see page 15).</p>
	<p>Maximum flow exceeded.</p>	<p>Reduce the flow, and put again into operation.</p>
	<p>Damage in the motor mechanism.</p>	<p>Return the unit to your supplier.</p>
<p>2 - INJECTION INCIDENTS</p> <p>WATER FLOWING BACK INTO THE SOLUTION TANK</p>	<p>Worn out or contaminated seals.</p>	<p>Change the seals in the injection assembly (see pages 20 & 22).</p>
<p>NO SUCTION OF PRODUCT</p>	<p>The hydraulic motor is stopped.</p>	<p>See above MOTOR INCIDENTS.</p>
	<p>Check out the suction height. Important : The limit is 4 m (13 feets).</p>	<p>Reduce if it necessary.</p>

	Air intake in the suction pipe.	Check the tightening of the hose clips.
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FAULTS	DIAGNOSIS	REMEDIES
UNDER INJECTION	Blocked suction tube or clogged up strainer.	Clean these items Important : Avoid putting the strainer at the bottom of the drum. Always leave a minimum of 10 cm (4").
	Suction of air	Prime the suction pipe.
	Suction pipe incorrectly primed. Maximum flow exceeded.	Reduce the flow.
	Worn plunger or plunger seal.	Change.
3 - LEAKS CONNECTION LEAKS	Worn injector body.	Change.
	Seal is badly positioned or cut.	Position it correctly or replace it.
	Pipe is not correctly.	Insert it correctly.

**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

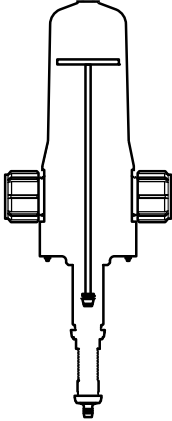
DOSATRON INTERNATIONAL, will replace any part considered as originally defective during the first 12 months from the date of purchase.

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.

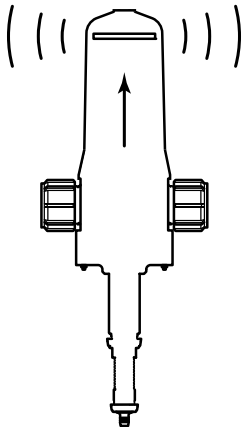
KNOW YOUR FLOW...A SIMPLE METHOD

THE PROPORTIONAL INJECTOR IS COMPOSED OF :

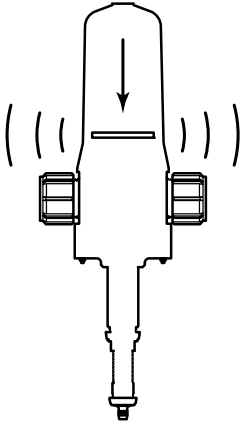


- A driving volumetric hydraulic piston motor connected to.
- An injector piston.

The speed of motor is proportional to the flow water passing through the system ; the greater the flow the faster it goes.
 In its up and down movement, you can hear the piston motor «click» :



Once in the up position



Once in the down position

Count the number of clicks in 20 seconds.

Multiply x 300 = flow of water in imperial gallons/hour.

Count the number of clicks in 24 seconds.

Multiply x 300 = flow of water in u.s gallons/hour.

Count the number of clicks in 90 seconds.

Multiply x 300 = flow of water in litres/hour.



Rue Pascal - B.P. 6 - 33370 TRESSES (Bordeaux) FRANCE
Tél. 33 (0)5 57 97 11 11 - Fax 33 (0)5 57 97 11 29 - Télex 541 931 F
<http://www.dosatron.com>

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