



MANUAL

OPERATING AND MAINTENANCE

miXtron



Mixtron S.r.l. declares that there are no restricted substances (according to REACH annex XVII) contained in the articles supplied or, respectively, that when using these substances, their conditions of restriction according to annex XVII are complied with.

Mixtron S.r.l. guarantees that the products supplied contain none of the currently valid substances of very high concern (SVHC) in a concentration above 0,1% weight by weight (w/w).

Furthermore, we can assure you that we will monitor any further amendments to the SVHC substances list and will inform you immediately, as soon as we have identified chemicals on the candidate list for SVHC substances, which are contained in our products.



ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ

Заявитель ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ "ГИДРОКИНЕТИКС"

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в лице Генерального директора Кутузова Андрея Владимировича

заявляет, что Дозаторы объемные, пропорциональные, серии: MX.

Изготовитель "MIXTRON S.R.L."

Место нахождения: Италия, Via Curiel 7, 42025 Cavriago (RE), Italy

Код (коды) ТН ВЭД ЕАЭС: 8413504000

Серийный выпуск

соответствует требованиям

Технического регламента Таможенного союза ТР ТС 010/2011 "О безопасности машин и оборудования"

Декларация о соответствии принята на основании

Протокола испытаний № 0857-ДМП/19 от 06.11.2019 года, выданного Испытательной лабораторией Общества с ограниченной ответственностью «Экспертиза Качества» (регистрационный номер аттестата аккредитации РОСС RU.32001.04ИФБ1.ИЛ147)

Схема декларирования соответствия: Id

Дополнительная информация

раздел 2 ГОСТ 12.2.003-91 "Система стандартов безопасности труда. Оборудование производственное.

Условия хранения продукции в соответствии с ГОСТ 15150-69 "Машины, приборы и другие технические изделия. Исполнения для различных климатических районов. Категории, условия эксплуатации, хранения и транспортирования в части воздействия климатических факторов внешней среды". Условия хранения конкретного изделия, срок хранения (службы) указываются в прилагаемой к продукции товаросопроводительной и/или эксплуатационной документации.

Декларация о соответствии действительна с даты регистрации по 06.11.2024 включительно.



Кутузов Андрей Владимирович

(Ф.И.О. заявителя)

Регистрационный номер декларации о соответствии: ЕАЭС N RU Д-ПТ.Ан03.В.15854/19

Дата регистрации декларации о соответствии: 07.11.2019

DICHIARAZIONE DI CONFORMITÀ



DECLARATION OF CONFORMITY

(ai sensi della Direttiva Macchine 2006/42/CE All. II parte 1.A – According to Machinery Directive 2006/42/EC Annex II part 1.A)

Produttore – *Manufacturer*
Indirizzo – *Address*
Telefono – *Telephone*
E-mail – *E-mail*

MIXTRON SRL
I – 42025 Cavriago (RE), - Via Curiel 7
+30 0522 944330
info@mixtron.it

DICHIARA CHE / DECLARES THAT

Tipo di apparecchiatura – *Type of equipment* Pompa dosatrice volumetrica proporzionale
per liquidi / *Volumetric proportional dosing
pump for liquids*

Marchio commerciale – *Trademark*

Modello: Tutti i modelli in produzione (vedi codice nella marcatura sul prodotto)
Model: *All model in production (see p/n in product marking area)*

Numero di serie Tutti (vedi marcatura sul prodotto)
Serial number *All (see product marking)*

Anno di fabbricazione Tutti (vedi marcatura sul prodotto)
Year fo construction *All (see product marking)*

È conforme alla seguente direttiva / *Complies with to the following directive:*

Direttiva Macchine 2006/42/CE / *Machinery Directive 2006/42/CE*

E inoltre dichiara che sono state rispettate le parti applicabili delle seguenti norme / *Furthermore confirms that the relevant parts of the following standards have been applied*

EN ISO 12100:2010 (Sicurezza del macchinario - Principi generali di progettazione - Valutazione del rischio e riduzione del rischio) / **EN ISO 12100:2010** (*Safety of machinery - General principles for design - Risk assessment and risk reduction*)

EN 12162:2001+A1:2009 (Pompe per liquido - Requisiti di sicurezza - Procedura per prove idrostatiche) / **EN 12162:2001+A1:2009** (*Liquid pumps - Safety requirements - Procedure for hydrostatic testing*)

EN 13951:2012 (Pompe per liquidi - Requisiti di sicurezza - Applicazioni agro-alimentari - Regole di progettazione per assicurare l'igiene durante l'utilizzo) / **EN 13951:2012** (*Liquid pumps - Safety requirements - Agrifoodstuffs equipment; Design rules to ensure hygiene in use*)

La persona autorizzata a costituire il fascicolo tecnico è/ *The person authorised to compile the technical file is:* Sig. Stefano Brevini c/o Mixtron Srl, via Curiel n. 7, 42025, Cavriago (RE)

Cavriago (RE)

(Stefano Brevini - General Manager)



PROPORTIONAL VOLUMETRIC DOSING PUMP

OPERATING AND MAINTENANCE MANUAL

MX.075 - MX.150 - MX.250 - MX.300

ENGLISH



Ref.: _____

Serial no. _____

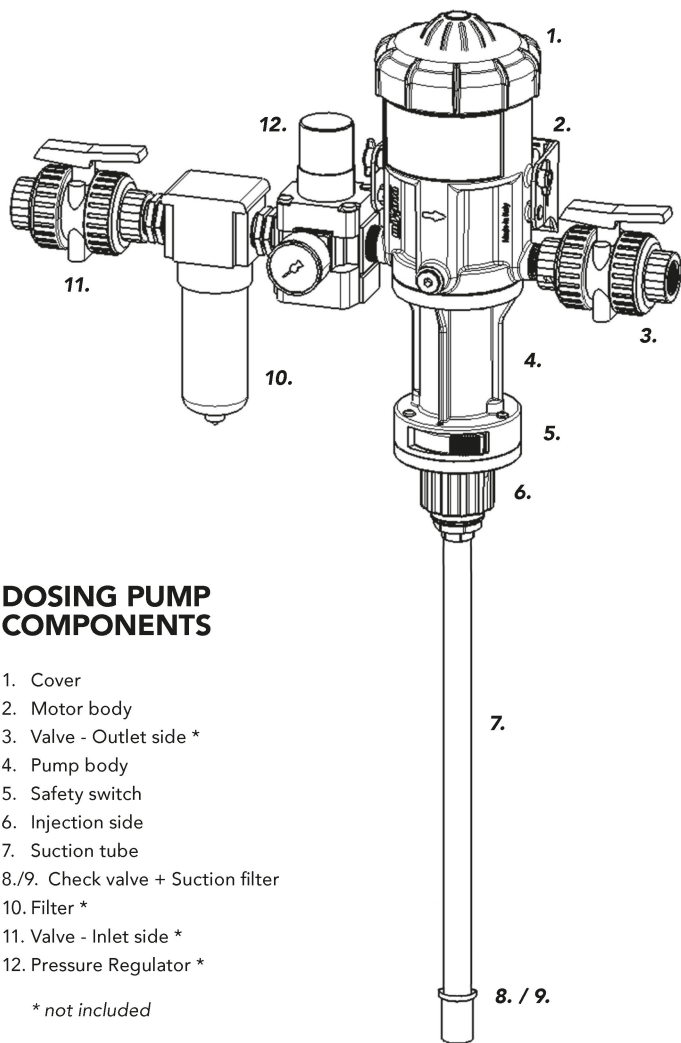
Date of registration _____

Date of purchase: _____

Specifications for each model

Model	Water flow range	Additive flow range	Water flow range	Additive flow rate range
	metric units	metric units	U.S. units	U.S. units
MX.075	5 l/h - 0.75 m ³ /h	0,0015 - 75 l/h (1,5 cc - 75 l/h)	0,022 - 3,302 GPM	0,050 oz/h - 0,330 GPM
MX.150	10 l/h - 1.5 m ³ /h	0,003 - 150 l/h (3 cc - 150 l/h)	0,044 - 6,604 GPM	0,101 oz/h - 0,660 GPM
MX.250	10 l/h - 2.5 m ³ /h	0,003 - 250 l/h (3 cc - 250 l/h)	0,044 - 11,007 GPM	0,101 oz/h - 1,101 GPM
MX.300	10 l/h - 3.0 m ³ /h	0,003 - 300 l/h (3 cc - 300 l/h)	0,044 - 13,209 GPM	0,101 oz/h - 1,321 GPM

- OPERATING PRESSURE: 0.3 - 6 Bar [4.3 - 87 PSI]
- MAXIMUM STATIC PRESSURE: 10 Bar [145 PSI]
- MAXIMUM TEMPERATURE: 40°C [104 °F]
- MINIMUM TEMPERATURE: 5°C [41 °F]
- INLET / OUTLET CONNECTIONS: 3/4 "BSPT
- DOSAGE PERCENTAGE: 0.03 - 0.3% [1:3000 - 1:350]
- DOSAGE PERCENTAGE: 0.2 - 2% [1:500 - 1:50]
- DOSAGE PERCENTAGE: 0.5 - 4% [1:200 - 1:25]
- DOSAGE PERCENTAGE: 1 - 5 % [1:100 - 1:20]
- DOSAGE PERCENTAGE: 1 - 10 % [1:100 - 1:10]



DOSING PUMP COMPONENTS

1. Cover
2. Motor body
3. Valve - Outlet side *
4. Pump body
5. Safety switch
6. Injection side
7. Suction tube
- 8./9. Check valve + Suction filter
10. Filter *
11. Valve - Inlet side *
12. Pressure Regulator *

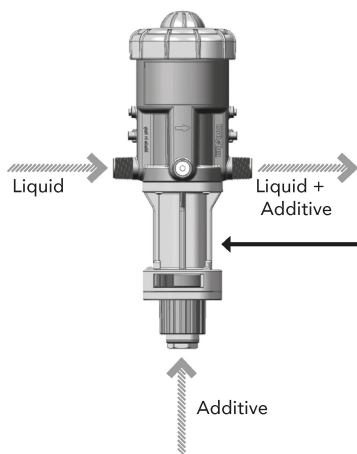
* not included

You are now the owner of a Mixtron Volumetric Dosing Pump.

Congratulations on your choice! This model is the outcome of our continuous technical-experimental research activities. Our engineers designed Mixtron dosing pumps to reflect the best technical developments in the field. Our dosing pumps are manufactured with materials painstakingly selected for resistance against most of the chemicals used in the fields of application of our products. Your Mixtron will become your most faithful ally.

It will run for years to come with very little, but regular, care.

Connected to a system or public water supply network, the dosing pump uses the pressure and flow of the water as its only power source. When properly installed, the dosing pump will draw the concentrate, meter it in the desired percentage and inject it into the main liquid in the mixing chamber, producing a uniform solution. The solution is then conveyed out of the dosing pump. The dose of additive is always proportional to the amount of main liquid flowing into the dosing pump, regardless of flow or pressure variations.



IMPORTANT The serial number of your Mixtron dosing pump is found on the pump body. Please register this number in the relevant section of our website, write it in the relevant space on the back cover of the manual, and make reference to it every time you contact your retailer for information or service.

**PLEASE READ THIS
MANUAL CAREFULLY BEFORE
STARTING THE DEVICE**

This document is not a contract and is provided for guidance only. The Mixtron company reserves the right to modify its products at any time.

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INSTALLATION

PRECAUTIONS

- When connecting any instrument to the water supply network or booster system, make sure you observe the protection and disconnect requirements set out in current safety regulations. (see page 11)
- When you connect the dosing pump to the water supply line, make sure the water flows into the dosing pump in the direction of the arrows marked on the motor.
- Never install the dosing pump on top of tanks containing acids or that can potentially release corrosive or aggressive gases; in any case, always protect it from any such emissions.
- Keep the dosing pump away from sources of direct heat. For increased protection, the Mixtron dosing pump, the only one on the market, is supplied standard with a thermometer that lets the operator know, through a simple visual check, whether the pump is operating under optimal conditions or adjustments are needed to avoid overheating. Indicator is reversible and changes colour from green to red when a temperature of 43°Celsius (109°F) is reached.



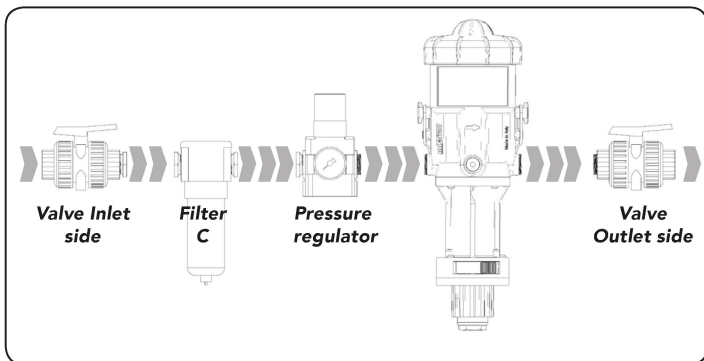
- If you use your Mixtron unit with a supply pump, we recommend you do not connect it to the supply pump's suction line (to prevent siphoning).
- Setting up the dosage rate is the user's responsibility. The user is required to follow the recommendations of the chemical product's manufacturer. Mixtron accepts no liability for mistakes in the selection of the dosage rate.
- Make sure the system's water pressure and flow comply with the minimum and maximum specification requirements for proper operation of your Mixtron dosing pump. Mixtron accepts no liability if the dosing pump does not work due to non-observance of the minimum and maximum flow and pressure specifications. (see page 2)
- Adjust the dosage when the device is not under pressure. Check the product regularly to ensure the dosing pump is drawing the additive correctly.

Change the dosing pump's suction tube as soon as it shows signs of wear or damage from contact with the additive or its exposure to the weather elements.

- Rinse the dosing pump every time the additive is changed and shut off the delivery line after the last use to avoid leaving the system pressurized.
- Assemble and tighten by hand only, without the use of tools.

WATER HIGH IN PARTICLE CONTENT

To ensure the dosing pump's proper operation and maximum life where the water has a high particle load, install the filter C (e.g. 60 microns) upstream of the dosing pump, sizing it based on the water conditions.



WATER HAMMER

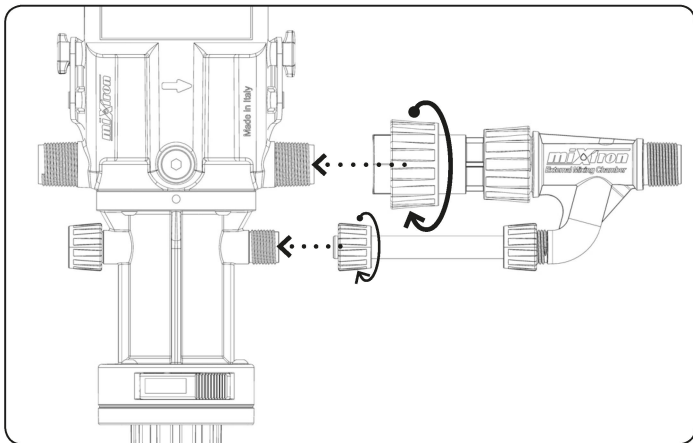
- In order to protect the dosing pump from water hammers, the Mixtron conditions of warranty require an anti-water hammer device or, in other words, a device to regulate spikes in backpressure. In automated systems, the use of solenoid valves with slow opening and closing is recommended. If a single dosing pump is serving several sites, the solenoid valves should not operate simultaneously.

WHERE TO LOCATE THE DOSING PUMP

- Install the dosing pump and keep the additive in an easily accessible place. Make sure the chosen position presents no risk of contamination from external substances. All lines and tubes conveying the finished product (e.g. water+additive) should be labelled with the following: "CAUTION! Non-Potable Liquid".

BY-PASS MODEL EXTERNAL INJECTION INSTALLATION

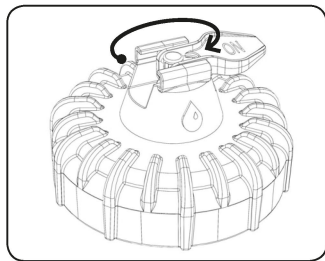
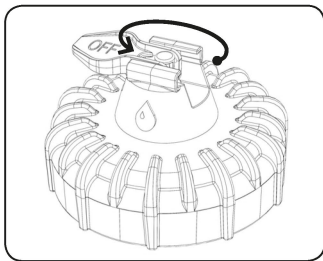
The Mixtron dosing pump equipped with By-Pass (external mixer) makes it possible to use aggressive liquids without causing damage to the motor piston's plastic parts. The By-Pass system is an option and supplied on request.



ON-OFF VALVE MODEL

The Mixtron dosing pump can be supplied with ON-OFF valve on the cover (ON-OFF system is an option supplied on request).

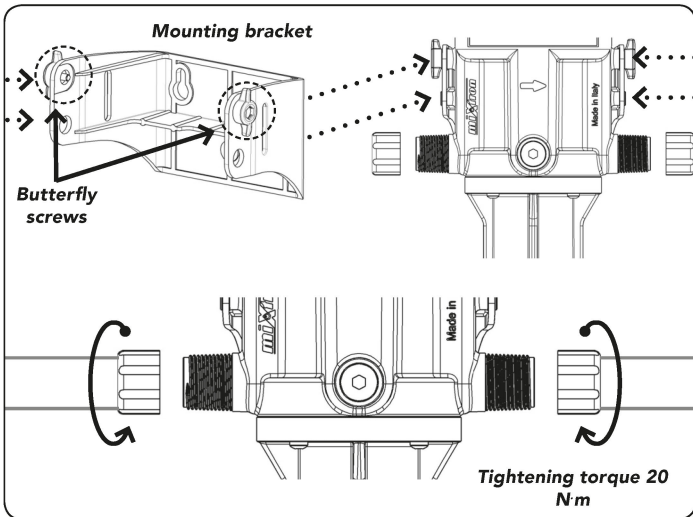
- ON-OFF valve in the ON position: the additive is drawn and mixed in the Mixtron dosing pump.
- ON-OFF valve in the OFF position: the Mixtron dosing pump's motor piston is at rest; there is no drawing or mixing of the additive, only the main liquid flows in and out.



INSTALLING YOUR MIXTRON DOSING PUMP

(Install by hand. Do not use tools.)

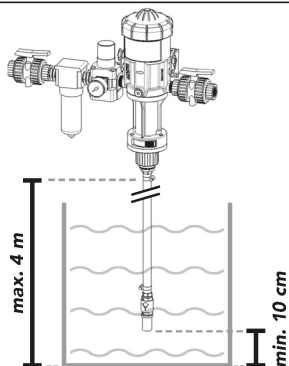
- The bracket is used to wall-mount the dosing pump.
- For proper installation, introduce the Mixtron dosing pump in the support and fit it into place by slightly bending the tabs on the bracket.
- When the dosing pump is properly fitted between the tabs on the bracket, fasten it using two butterfly screws.
- Once fastened, remove the protection caps on the inlet and outlet ports and the plug blocking the additive suction.
- You can now connect the dosing pump to the supply line. To connect the unit to the supply line, use hoses with an internal diameter of 16 mm, fastened with clamps and swivel fittings $\text{\O} 20 \times 27 \text{ mm}$ [3/4" BSPT].
- Before connecting the additive suction tube (supplied standard) to the dosing pump, make sure you place the necessary amount of teflon (supplied standard) on the threaded side of the hosetail. This will ensure a perfect seal.



The Mixtron dosing pump comes complete with: • A mounting bracket • A 1.5 m tube • A suction filter and check valve.

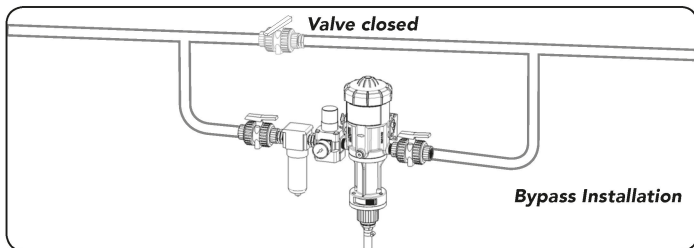
IMPORTANT • For proper operation, make sure the suction filter has been positioned about 10 cm above the bottom of the additive tank; this will prevent suction of insoluble particles, which could damage the dosing pump.

- To avoid contamination, do not place the suction filter on the ground. The surface of the additive must be below the dosing pump's water inlet (to prevent siphoning).
- The maximum suction height (vertical distance between dosing pump and additive tank) is 4 metres.



INSTALLATION TIPS

The dosing pump can be installed to the public water supply network or main water supply line either directly or with a bypass line (recommended). Before use, make sure flow and pressure parameters do not exceed the operating capabilities of the dosing pump. If this is the case, to avoid damaging the unit, refer to the section "EXCESSIVE FLOW".



To ensure the dosing pump's proper operation and maximum life, it is advisable to install a filter (we recommend 60-130 microns) on the delivery line and upstream of the dosing pump. Observe the standards and regulations in force in your country when connecting to the public water supply network.

EXCESSIVE FLOW (theoretical calculation) example applies to model MX.250

If the dosing pump clicks more than 40 times, it is performing more than 20 cycles every 15 seconds which means it is operating with an EXCESSIVE FLOW. If your requirements call for the use of parameters that cause an excessive flow, install a dosing pump with a higher flow capacity.

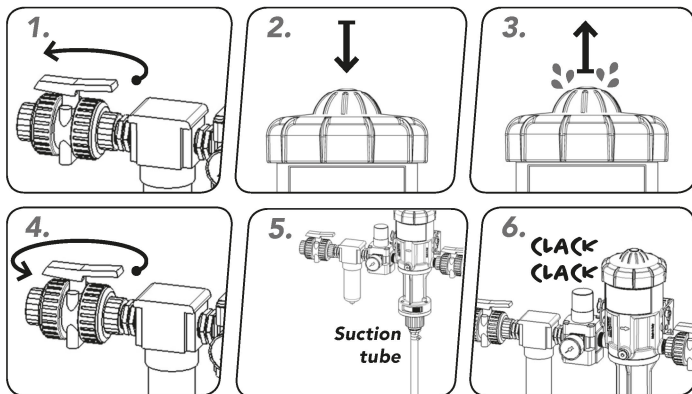
START-UP

FIRST START-UP

1. Open the inlet valve slightly (water, if this is the main liquid)
2. Push the bleed valve button on top of the motor cover; be sure to wear PPE (personal protective equipment) as required by local regulations (gloves UNI EN374/1/2/3, goggles).
3. When the bleed valve starts leaking solution and stops spitting air, let go of the button.
4. Open the inlet valve slowly, increasing the flow until the dosing pump starts automatically.
5. Allow it to operate until the product to inject is drawn and has reached the dosing pump body. This is visible through the clear suction tube.
6. The dosing pump will start making a clicking noise, which is a sign that it is running at capacity.

To accelerate suction, set injection rate to the highest percentage. After this initial suction phase, bring back the dosage percentage to the desired value.

IMPORTANT To ensure an optimum injection rate, we recommend you perform a product calibration test using a refractometer.

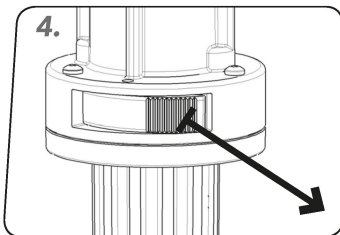
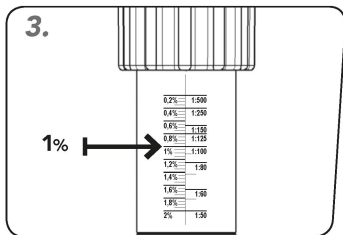
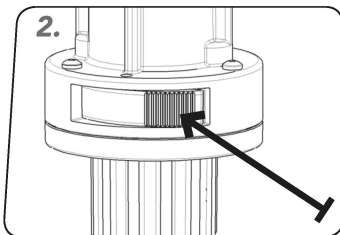
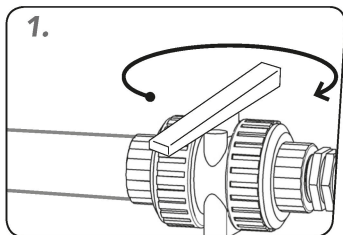


IMPORTANT Do not go beyond minimum and maximum dosage values. Strictly follow the graduated scale. This operation may, in fact, impair proper operation of the dosing pump.

ADJUSTING THE DOSAGE RATE

IMPORTANT Do not use tools to adjust the dosage percentage. Adjust the dosage percentage when the dosing pump IS NOT under pressure.

1. Close the inlet valve completely.
2. Keep the safety button pressed down before making the adjustment.
3. Align the lower edge of the adjustment sleeve to the desired percentage on the graduated scale.
4. Release the safety button to lock the injection rate adjustment sleeve into place.

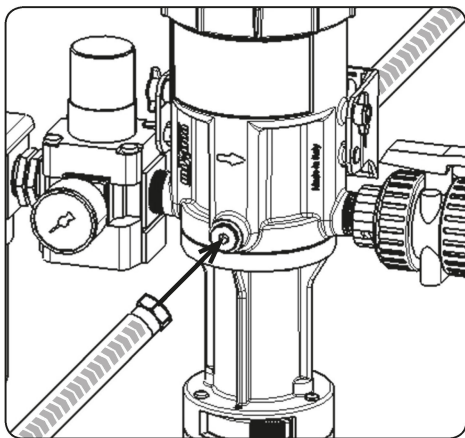


IMPORTANT Do not go beyond minimum and maximum dosage values. Strictly follow the graduated scale. This operation may, in fact, impair proper operation of the dosing pump.

MAINTENANCE

- To maintain the dosing pump in top condition, it is advisable to run a cleaning cycle with clean water after each use. (See figure below)
- Regular yearly maintenance will help extend the lifespan of your Mixtron dosing pump. In addition, all seals need to be replaced every year.
- This dosing pump was tested before packaging. Do not hesitate to call your authorized Mixtron dealer to request service or after-sales assistance.

ACTION	FREQUENCY/PERIODICITY
Cleaning cycle	After each use
General check	Yearly
Replace seals	Yearly
Replace other components	As needed



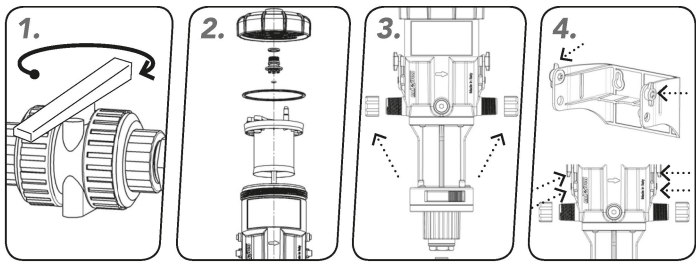
Cleaning cycle

RECOMMENDATIONS

- It is advisable to carry out the maintenance of the pump body whenever soluble products are used. To carry out the maintenance, remove the pump body and wash it thoroughly with plenty of clean water. When finished and before reassembly onto the motor body, lubricate the seal with silicone.
- After a long period of inactivity, remove the motor piston (see REPLACING THE MOTOR PISTON on page 15-18) and allow it to soak in tepid water (< 40°C) for a few hours prior to starting the dosing pump (e.g. at the start of the season). This operation will remove dry deposits on the motor piston and make the start-up easier and more fluid, preventing damage.

PRECAUTIONS AGAINST FROST

1. Close the delivery line-valve (e.g. water, if water network).
2. Remove the dosing cylinder (see REPLACING THE MOTOR PISTON on page 15-18). Remove the motor cover and motor PISTON.
3. Unscrew the inlet and outlet fittings that connect the dosing pump to the supply network until the dosing pump is completely free.
4. Empty the main body after removing it from the wall support. Reassemble only after rinsing it and cleaning the O-ring on the top cover.



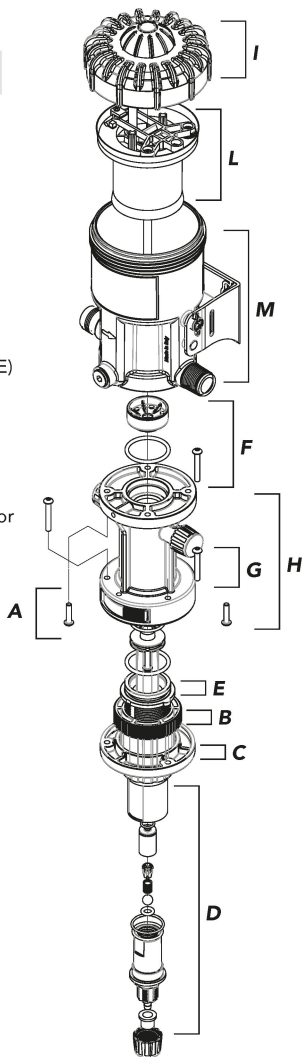
IMPORTANT
 For complete procedures go to "maintenance section" at www.mixtron.it.

REPLACING THE MOTOR PISTON AND SEALS

Pump 0.03-0.3%
P003

Perform the procedure with pressure off

1. Close the delivery line-valve (e.g. water, if water network)
2. Remove the suction kit (see components 7, 8, 9 page 3)
3. Remove the 3 screws (G)
4. Slide the ring out (C)
5. Unscrew the locking ring (B)
6. Slide the pump cylinder out (D)
7. Slide the anti-rotation lobe-style ring out (E)
8. Slide all of the piston components out (F)
9. Remove the four screws (A)
10. Remove the pump body (H)
11. Unscrew the motor cover (I)
12. Push the stem vertically and allow the motor piston (L) to come out of its body (M)
13. Change the motor piston (L) and the seals supplied in the seal kit
14. Reassemble the unit in reverse order



IMPORTANT

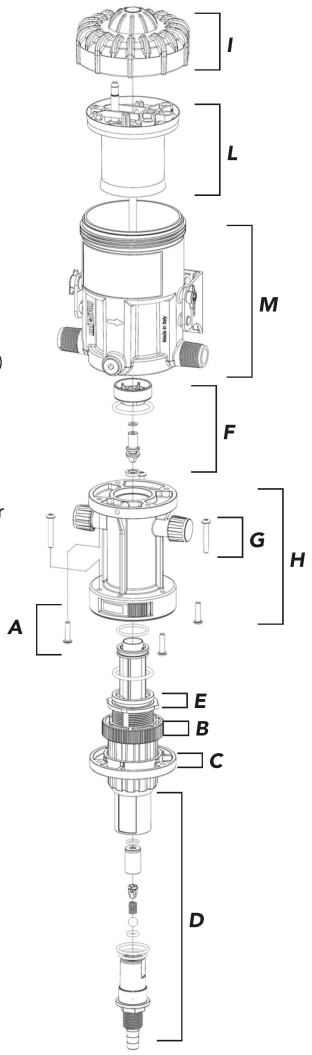
For complete procedures go to "maintenance section" at www.mixtron.it.

REPLACING THE MOTOR PISTON AND SEALS

Pump 0.2-2% P022

Perform the procedure with pressure off

1. Close the delivery line-valve (e.g. water, if water network)
2. Remove the suction kit (see components 7, 8, 9 page 3)
3. Remove the 3 screws (G)
4. Slide the ring out (C)
5. Unscrew the locking ring (B)
6. Slide the pump cylinder out (D)
7. Slide the anti-rotation lobe-style ring out (E)
8. Slide all of the piston components out (F)
9. Remove the four screws (A)
10. Remove the pump body (H)
11. Unscrew the motor cover (I)
12. Push the stem vertically and allow the motor piston (L) to come out of its body (M)
13. Change the motor piston (L) and the seals supplied in the seal kit
14. Reassemble the unit in reverse order



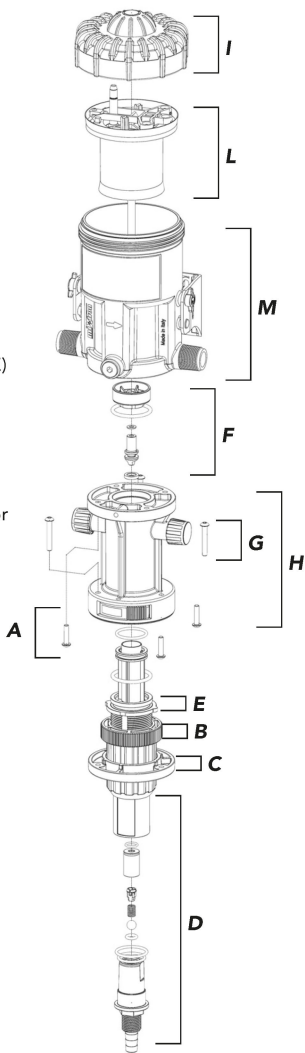
IMPORTANT
 For complete procedures go to "maintenance section" at www.mixtron.it

REPLACING THE MOTOR PISTON AND SEALS

Pump 0.5-4%
P054

Perform the procedure with pressure off

1. Close the delivery line-valve (e.g. water, if water network)
2. Remove the suction kit (see components 7, 8, 9 page 3)
3. Remove the 3 screws (G)
4. Slide the ring out (C)
5. Unscrew the locking ring (B)
6. Slide the pump cylinder out (D)
7. Slide the anti-rotation lobe-style ring out (E)
8. Slide all of the piston components out (F)
9. Remove the four screws (A)
10. Remove the pump body (H)
11. Unscrew the motor cover (I)
12. Push the stem vertically and allow the motor piston (L) to come out of its body (M)
13. Change the motor piston (L) and the seals supplied in the seal kit
14. Reassemble the unit in reverse order



IMPORTANT

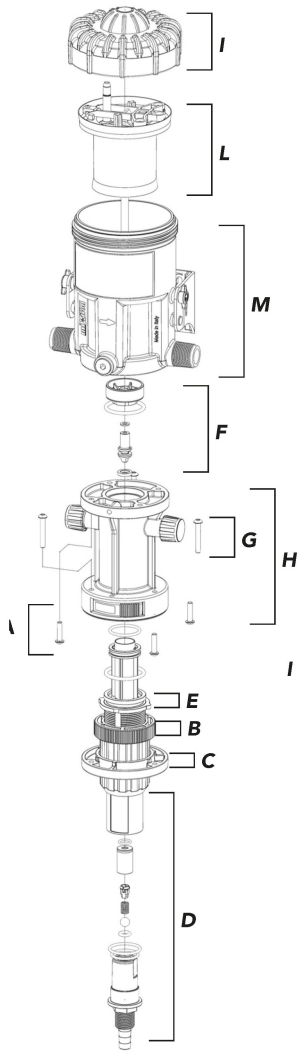
For complete procedures go to "maintenance section" at www.mixtron.it.

REPLACING THE MOTOR PISTON AND SEALS

Pump 1-5% P150

Perform the procedure with pressure off

1. Close the delivery line-valve (e.g. water, if water network)
2. Remove the suction kit (see components 7, 8, 9 page 3)
3. Remove the 3 screws (G)
4. Slide the ring out (C)
5. Unscrew the locking ring (B)
6. Slide the pump cylinder out (D)
7. Slide the anti-rotation lobe-style ring out (E)
8. Slide all of the piston components out (F)
9. Remove the four screws (A)
10. Remove the pump body (H)
11. Unscrew the motor cover (I)
12. Push the stem vertically and allow the motor piston (L) to come out of its body (M)
13. Change the motor piston (L) and the seals supplied in the seal kit
14. Reassemble the unit in reverse order



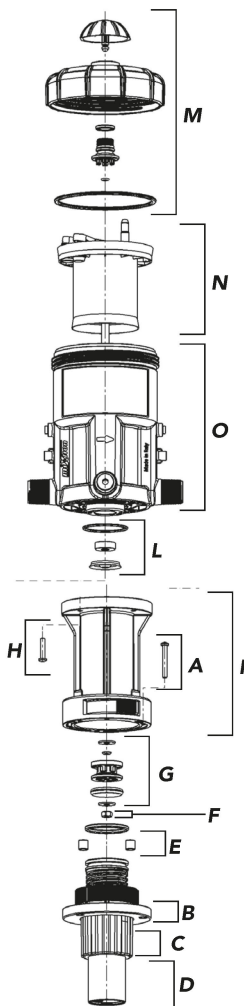
IMPORTANT
 For complete procedures go to "maintenance section" at www.mixtron.it.

REPLACING THE MOTOR PISTON AND SEALS

Pump 1-10%
P110

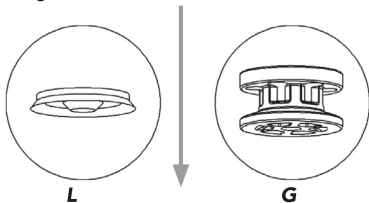
Perform the procedure with pressure off

1. Close the delivery line-valve (e.g. water, if water network)
2. Remove the suction kit (see components 7, 8, 9 page 3)
3. Remove the 3 screws (A)
4. Slide the ring out (B)
5. Unscrew the locking ring (C)
6. Slide the pump cylinder out (D)
7. Extract the two metal rollers (E)
8. Unscrew the nut (F) with an Allen key while holding the piston stem securely in place
9. Slide all of the piston components out (G)
10. Remove the four screws (H)
11. Remove the pump body (I)
12. Extract all the components of block (L) positioned on the stem of the piston
13. Unscrew the motor cover (M)
14. Push the stem vertically and allow the motor piston (N) to come out of its body (O)
15. Change the motor piston (N)
16. Reassemble the unit in reverse order



IMPORTANT

- Handle blocks (G) and (L) carefully.
- During assembly, observe the orientation of components as illustrated in the figure.



TROUBLESHOOTING

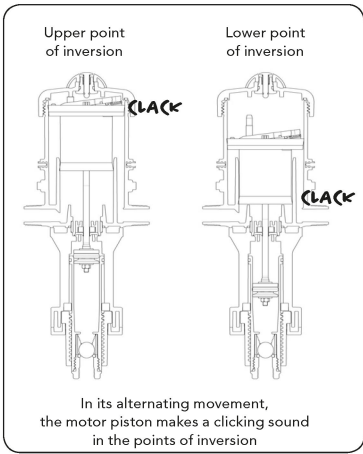
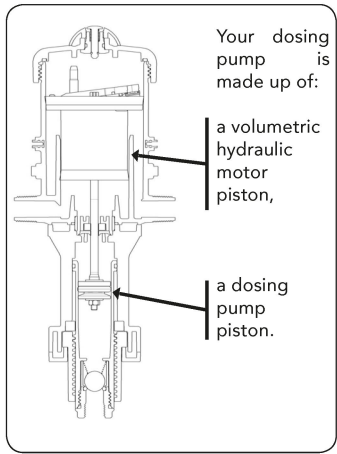
FAULT	CAUSES	SOLUTIONS
The MIXTRON dosing pump does not start or stops.	Seized motor piston.	Shut off the delivery line and reopen it slowly.
	Flow capacity has been exceeded.	Reduce the flow and restart the pump.
	Motor piston is broken.	Send the dosing pump to the nearest dealer.
Additive flowing back into tank.	Suction valve is dirty or damaged.	<ol style="list-style-type: none"> 1. Check direction of the valve. 2. Clean or change.
Suction tube filling up too slowly at first start-up.	Dosage rate setting is wrong.	For the first start-up, always set the dosing pump to the maximum percentage.
It is not drawing product.	The motor piston is not moving.	See Motor Piston.
	Air in the suction tube.	Check the tube for integrity.
	Suction tube is blocked or suction filter is dirty.	Clean or change.
injection	Suction of air.	<ol style="list-style-type: none"> 1. Check the tightness of screws in the injection side (tightening torque 5 Nm) 2. Check state of suction tube.
	Excessive flow.	Reduce the flow.
Wrong dosage rate.	Adjustment sleeve is in wrong position.	Make sure the sleeve is exactly above the mark of the desired rate and not beyond the maximum rate.
Water leaking between the motor cover and body.	Motor cover and body do not form a perfect seal.	Make sure the O-Ring on the cover is properly fitted in its housing.
Exploding cover.	Water hammer – return pressure is greater than 10-14 bar.	Install an anti-water hammer device.

WARRANTY

- Mixtron will replace any faulty part that is found to be defective from the factory for a period of twelve months from the date the dosing pump was first purchased.
- To obtain the replacement under the warranty, you must send the dosing pump or faulty part with proof of purchase to the manufacturer or its local authorized dealer.
- The material may be acknowledged as defective only by the manufacturer or its authorized dealer after inspection by their technicians.
- The dosing pump must be rinsed thoroughly to remove any product residue and shipped freight collect to the manufacturer or dealer.
- Repairs made under the warranty will be shipped back to the local authorized dealer at no charge.
- The warranty applies only to workmanship defects or defects caused by the manufacturer's negligence.
- The warranty does not cover defects resulting from installation errors or faults or from incorrect installation, selection and sizing of the dosing pump. Moreover, the warranty does not cover damages and defects arising from negligent shipping/handling, storage and use. The warranty does not cover damages arising from the use of substances and materials which were not expressly authorized or for which the dosing pump was not selected and designed. The warranty does not cover damages arising from corrosion or from contact with foreign bodies and substances not expressly stated as compatible with the dosing pump.
- Before injecting aggressive products, please check with your authorized retailer and use the guidelines available at authorized Mixtron dealers for the correct choice of dosing pump.
- Seals and other wearable parts are not covered under the warranty; likewise, the warranty does not cover damages caused by suction of unauthorized substances or by impurities such as sand. With potentially contaminated liquids, the warranty will be valid only if the dosing pump is properly protected with a filter (we recommend 60 microns or less) installed on the delivery line and upstream of the dosing pump.
- Mixtron accepts no liability if the dosing pump is used in conditions that do not comply with the instructions provided in this manual and in other technical documents.
- There are no warranties, express or implied, extending to any other product or accessory used with Mixtron dosing pumps.

CALCULATION OF FLOW

A simple method to know your system's flow is to detect the number of clicks (purely theoretical value).



2 clack = 1 motor cycle
 1 motor cycle = stroke volume

The flow of liquid passing through the dosing pump is proportional to the speed of the motor.

- Calculation of flow in litres/hour =

$$\frac{\text{Number of clicks in 15 seconds}}{2} \times 4 \times 60 \times 0.45$$

Calculation for 1 minute Calculation for 1 hour Displacement in litres

- Calculation of the liquid flow (e.g. water) in GPM (Gallons per Minute):

$$\frac{\text{Number of clicks in 15 seconds}}{2} \times 4 \times 60 \times \frac{0.45}{3.8}$$

Displacement in gallons