



- Water Medication
- Water Vaccination
- Water Acidification
- Water Supplementation
- Water System Sanitation
- Water Disinfection
- Hygiene & Biosecurity
- Fogging System

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or

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DOCCATPIGEN-08/14



**DOSATRON®**

*WATER POWERED DOSING TECHNOLOGY*



## NON-ELECTRIC WATER-DRIVEN DOSING PUMPS FOR PIG HEALTH

MEDICATION THROUGH DRINKING WATER

VACCINATION THROUGH DRINKING WATER

ACIDIFICATION THROUGH DRINKING WATER

DISINFECTION OF DRINKING WATER

HYGIENE & BIOSECURITY, FOGGING SYSTEMS, ...



### Our mission

Dosatron provides high quality equipments for the treatment of fluids, service excellence, a high level of expertise and customer proximity worldwide. Our ambition is to offer simple, clear, reliable and sustainable solutions to help you meet your challenges of today and tomorrow.

### Our ambition

Our ambition is to offer simple, clear, reliable and sustainable solutions to help you meet your challenges of today and tomorrow.

### Our vision

We want to be an actor in your designs and projects and actively participate in the development of your knowledge and solutions.

The technical expertise and customer proximity are the cornerstones of our vision. DOSATRON is committed to guarantee a quick and entirely customized service to your special needs, and maintain a continuous dialogue based on trust, listening and recommendation.

# COMPANY

An international presence in more than 100 countries

### Environment

- Water consumption control:
  - ▶ 25% reduction in water consumption.
- Energy control:
  - ▶ 20% reduction in site energy consumption.
- Waste recovery/treatment:
  - ▶ more than 60% of waste produced is recycled.

### Quality

100% of products tested. Monitoring and traceability of all parts and products assembled during the manufacturing process. A close and mutually beneficial partnership with DOSATRON's suppliers so as to ensure higher quality of purchased components. Visual and synthetic methods for monitoring production problems (Delays, Quality, Maintenance of Equipment, Staff Competence, etc.) in real time.



### Safety

For DOSATRON, the safety of its staff and its partners is a high priority. Action taken by the company's Quality Safety Environment service is intended to prevent and control all risks on site and for the associated activity. All the company's employees, regardless of their occupation and role, are the driving force behind, and are involved in the process.

By carrying out an ergonomic study of the current situation, DOSATRON has been able to design tailored tools and work stations, thereby reducing the severity of working conditions.

### Ecodesign

By broadening the scope of its ISO 14001 certification and by integrating the activities of Design and development, DOSATRON can now pride itself on implementing a true Ecodesign process. This step has allowed the company to understand the entire life cycle of its product and thus to find solutions to limit the associated environmental impact.

## DOSATRON, INNOVATION BORN OUT OF EXPERIENCE



The company born of an invention

A universal spectrum of skills

Innovating for your development

Technological design is our hallmark  
The mains supply service is our solution

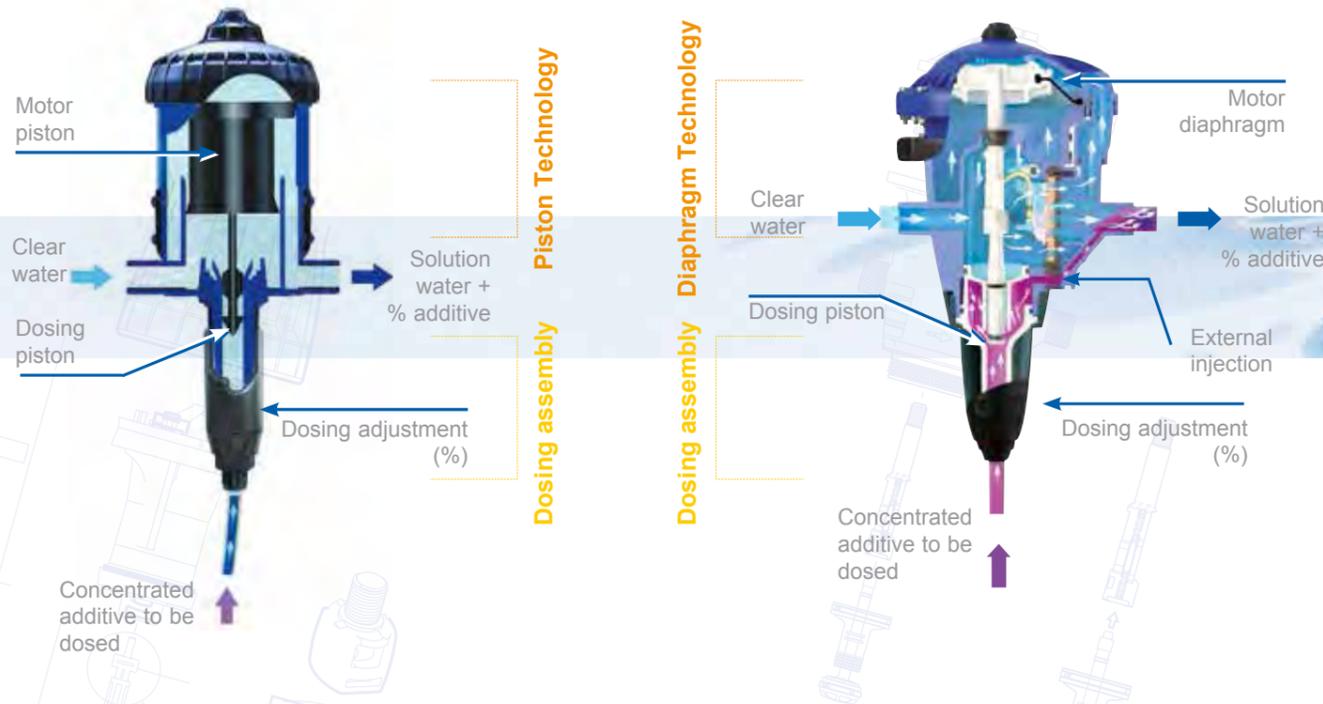
## DOSATRON Technology

Dosatron technology is based on a **hydraulic motor pump activated only by the pressure and the flow of the water**. Installed directly on the water supply line, the Dosatron operates by using **the water flow as a source of energy**. The pressure and flow of the water actuate the motor piston which drives a dosing piston. The additive is injected and mixed continuously with the water from the mains supply at the selected dosing rate % (rate of product/water incorporation). The dose of concentrated additive is directly proportional to the volume of water which passes through the Dosatron, independently of variations in the flow rate and pressure of the mains water supply.

### The hydraulic motor: Piston Technology or Diaphragm Technology

The motor piston or diaphragm moves under the pressure of the water. A system of valves or a slider allows the movement to be reversed. Each piston or diaphragm cycle corresponds to a predetermined volume of water which passes through the pump (motor volume). The speed of the motor varies proportionally with the flow of water.

The dosing pump is called a **VOLUMETRIC pump**.



### The dosing assembly

"The Dosing piston driven by the motor continuously injects a fixed volume of product (adjustable capacity of the dosing body). The dosing piston will inject the quantity of product that corresponds to the volume of water passing through the motor. Therefore, the operating principle ensures constant dosing, independently of the variations in flow rate and pressure of the water.

The injection of the product is **PROPORTIONAL** to the water flow rate.



# DOSATRON

### The perfect solution at your service...

- ▶ For metering the amount of additive.
- ▶ For a constant, proportional, accurate and homogeneous dosage.
- ▶ For facilities without electricity or in difficult or technical environments.
- ▶ For a reasonable cost, ease of installation, for a significant and immediate added value and productivity.

### The universal solution

- ▶ Pure core business: "In-Line Dosing Solutions Specialists"
- ▶ Our core Market: **Livestock, Water Treatment, Hygiene, Environment, Industry...**

## PROPORTIONAL DOSING WITHOUT ELECTRICITY



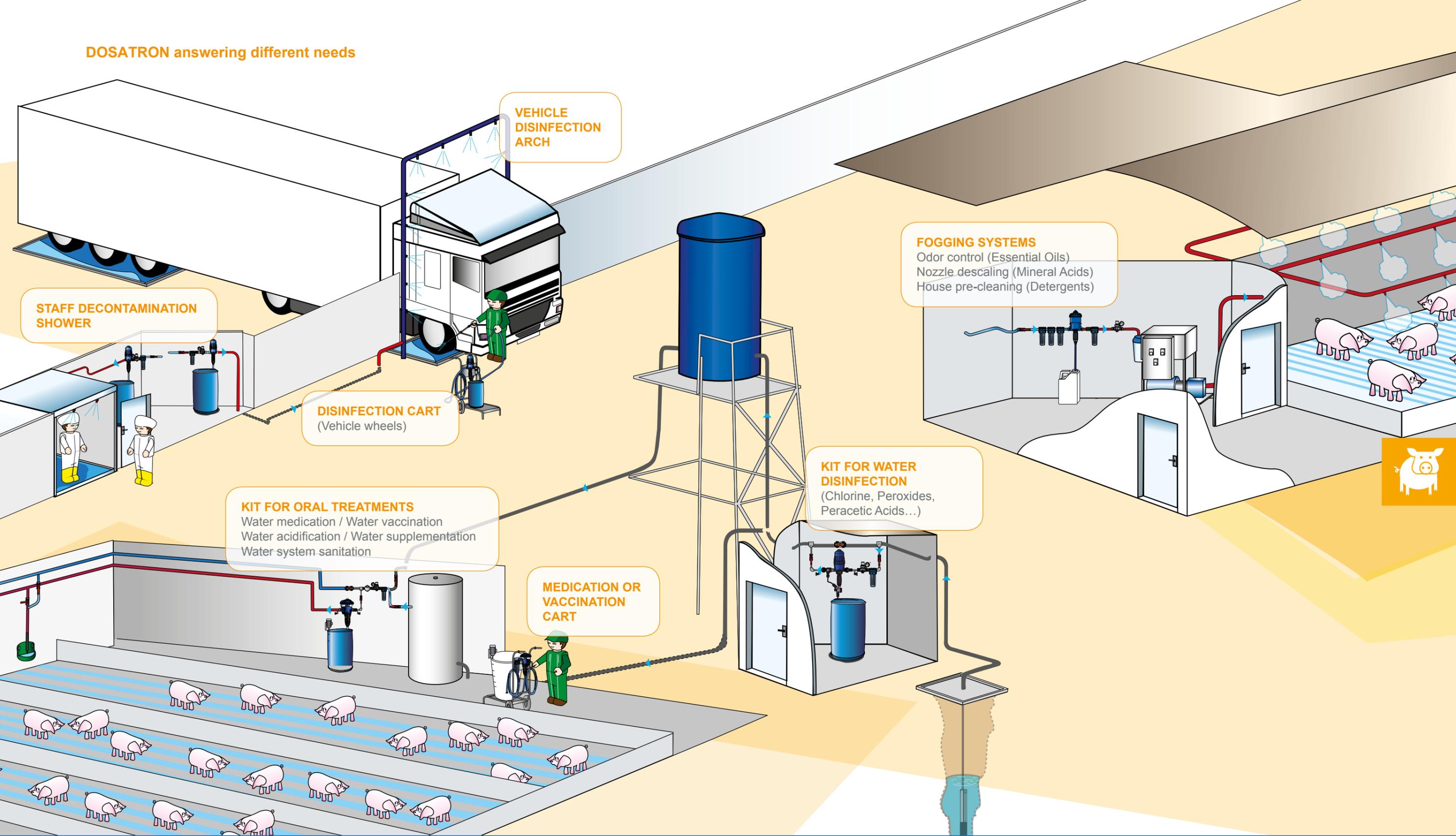
Dosatron technology is based on a hydraulic motor pump activated only by pressure and the flow of the water.

Dose any liquid or water-soluble product

Multiple applications, one solution

High precision & repeatability dosing

DOSATRON answering different needs



TREATMENTS & VACCINATIONS THROUGH DRINKING WATER, WATER DISINFECTION OR HYGIENE & BIOSECURITY



Ideal for medication in emergency situations (Curative & Metaphylactic)

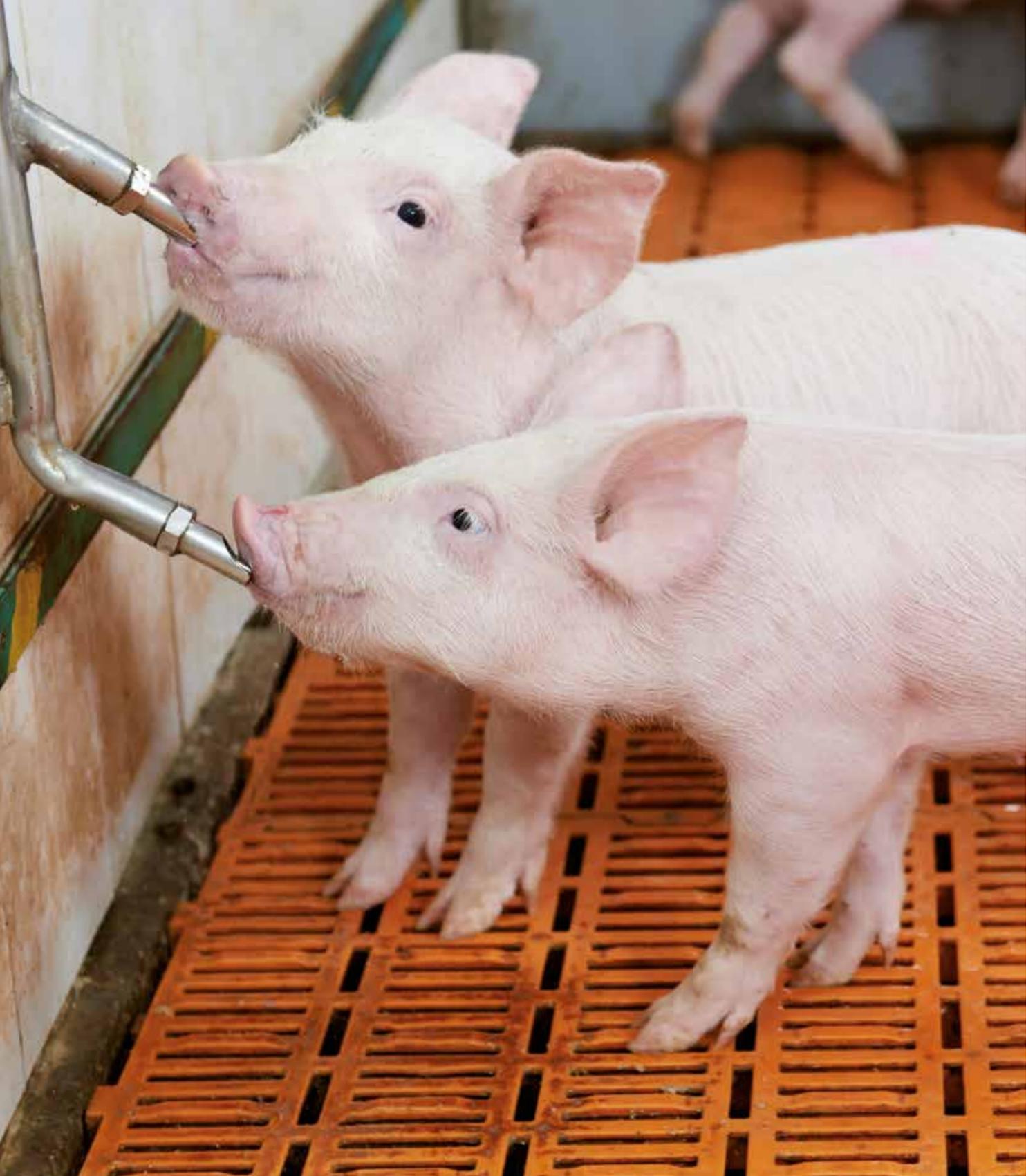
The easiest way to administer vaccines

Easy to use

Special models available for high concentration organic acids

Precise & homogeneous dosing

Low water flow & pressure capability



## DRINKING WATER MEDICATION

For many years now, drinking water medication has proved its efficiency and also flexibility allowing a fast implementation in emergency situations.

The current development of legislation and constant improvement of medication solubility are indicative of regained interest in the technique to use the right dose of medicine at the right time & only when necessary.

# MEDICATION THROUGH DRINKING WATER



**DOSATRON meets your needs**

**For oral powders or liquid medicines ◀**

**For weaners & finishers ◀**

**For barns up to 4000 pigs ◀**

**For water flows from 4.5 l/h to 20 m<sup>3</sup>/h ◀**

**For water pressures from 0.15 bar (1.5 m height) to 10 bar ◀**

A SOLUTION FOR YOUR WATER MEDICATION NEEDS



Ideal for medication in emergency situations  
(Curative & Metaphylactic)

Sick animals generally  
drink more than they eat

Fast & Flexible medicine  
administration

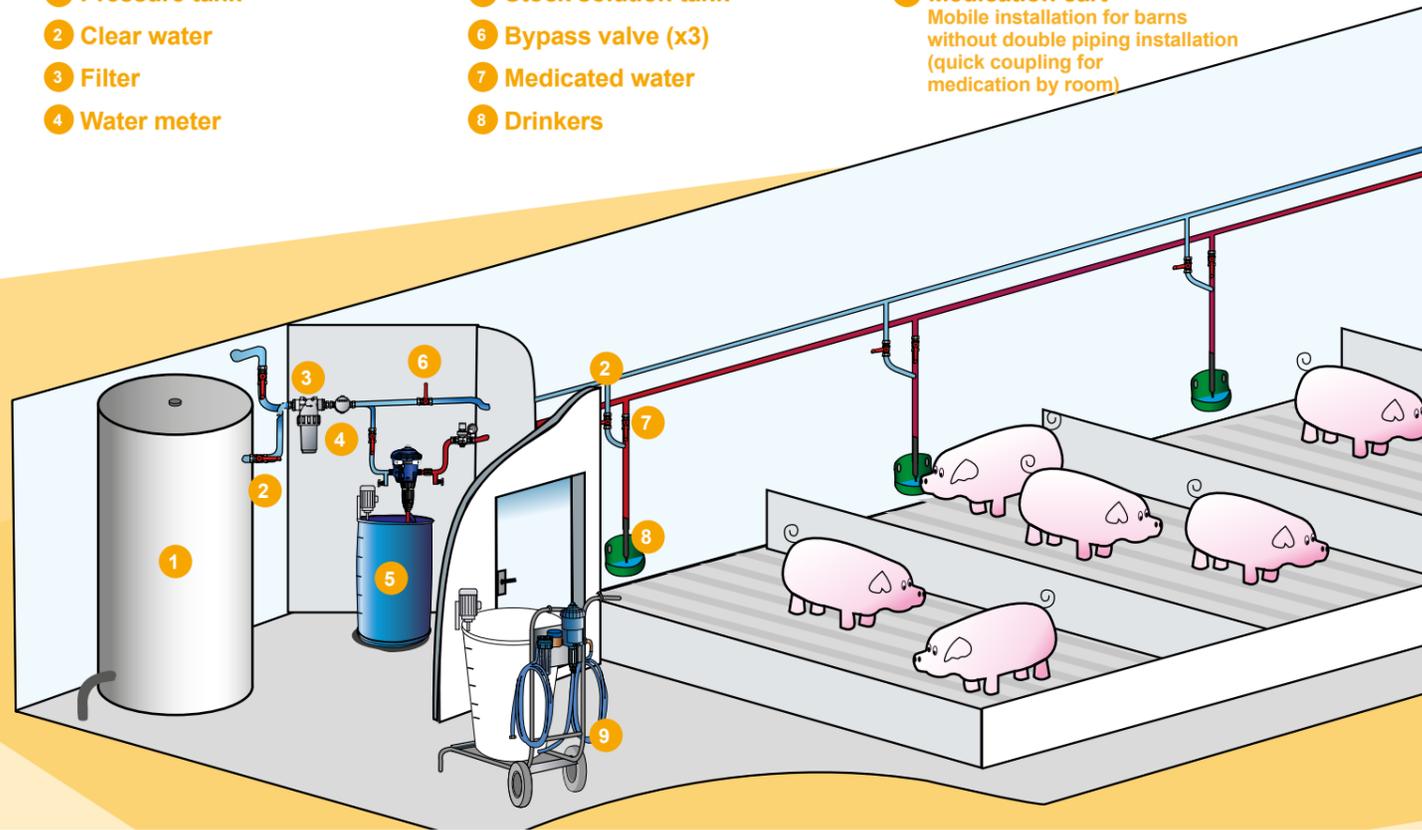
Reduces cross  
contamination  
risk



## Principle of installation

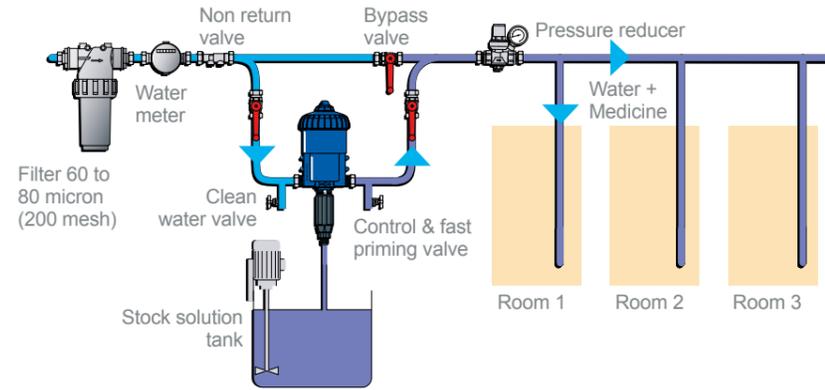
- 1 Pressure tank
- 2 Clear water
- 3 Filter
- 4 Water meter
- 5 Stock solution tank
- 6 Bypass valve (x3)
- 7 Medicated water
- 8 Drinkers

- 9 Medication cart  
Mobile installation for barns without double piping installation (quick coupling for medication by room)

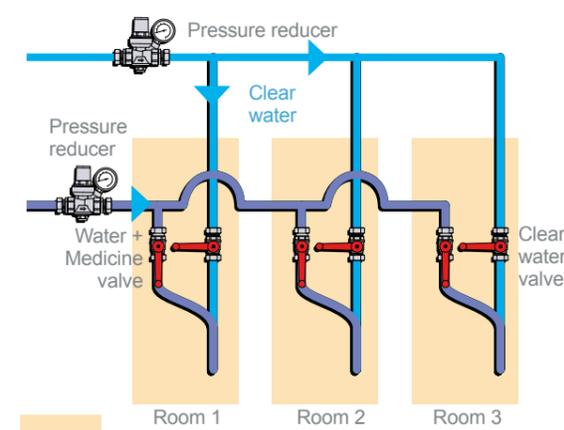


## Water system installations (In case of direct supply from a well pump, install pressure tank upstream)

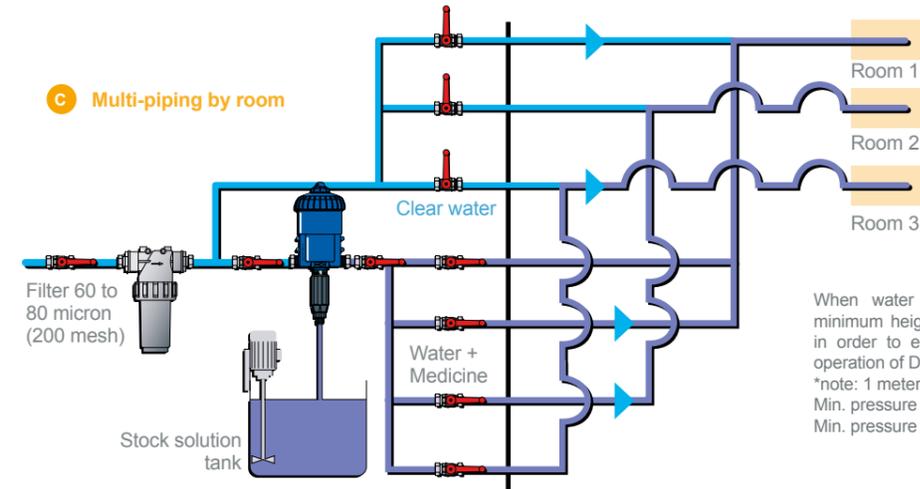
### A Standard installation (one treatment for the complete barn)



### B Double piping installation (treatment by room)



### C Multi-piping by room



When water comes from a header tank, allow minimum height between tank and the drinking line in order to ensure minimum pressure\* for correct operation of Dosatron pump and troughs.  
\*note: 1 meter = 0.1 bar  
Min. pressure D25 range = 0.3 bar  
Min. pressure DIA range = 0.15 bar



## Advantages of medication through drinking water

- ▶ In general, **sick animals or animals under stress continue to drink to compensate for hyperthermia and dehydration.**
- ▶ Compared to the feed, **drinking water guarantees quick action and assimilation of treatment** before irreversible lesions appear, also minimizing the spread of infection.
- ▶ **It offers flexibility and continuous implementation** (adjustment of the dose or the duration, changes and association of treatment possible under veterinary control). Small targeted groups can be easily treated thanks to multi piping watering installations
- ▶ **Treatment is more homogeneous** and the proportions more regular.
- ▶ **There are fewer risks of cross contamination and/or antibiotic residue on slaughter.**
- ▶ **There is no interference between treatment and other additives in the feed and a better stability than with pelleted feed** (steam, high temperature, pressure).

## Dosatron advantages over traditional medication tanks

- ▶ Fast to implement in case of emergency.
- ▶ Doses and treatment can be modified at any time (dosing scale easy to adjust / small stock solution tank easy to handle and to clean).
- ▶ Limitation of sedimentation, deposits and contamination (rising temperature) in the header tanks (improved hygiene conditions).
- ▶ Avoiding the risk of over-dilution of the treatment in the medication tank (operated with float valve) or non-supply of water after medication (when the Dosatron small stock solution tank is empty, fresh water keeps going through Dosatron to the drinkers).
- ▶ It is compact and facilitates the preparation of the treatment (less dosing errors when preparing the treatment).
- ▶ Possibility of mobile Dosatron medication units (mounted on a cart), connectable in each room to be treated.
- ▶ Limits risks by simplifying powder handling compared to medication header tanks: moisture, weight, transport.
- ▶ No heavy task of filling medication header tanks, sometimes several times per day (un-adapted tank size).
- ▶ Self-priming of the Dosatron when animals start drinking.
- ▶ Precise dosing, regardless of variations in water flow or water pressure, which may occur in the main line.
- ▶ Fits easily into existing watering systems.
- ▶ Dosatron also allows the sanitation of water pipes and drinking troughs to eliminate treatment residues & bio-films (Dosatron dosing rates up to 3% or more are often required).

## AN SOLUTION FOR YOUR WATER MEDICATION NEEDS



Ideal for medication in emergency situations (Curative & Metaphylactic)

Sick animals generally drink more than they eat

Fast & Flexible medicine administration (easy medication by room for weaners)

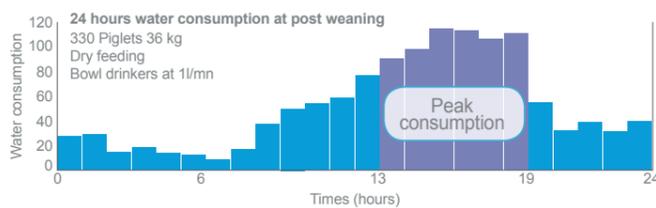
Reduces cross contamination risk

## Medication calculation based on posology

### \*Estimated daily water consumption

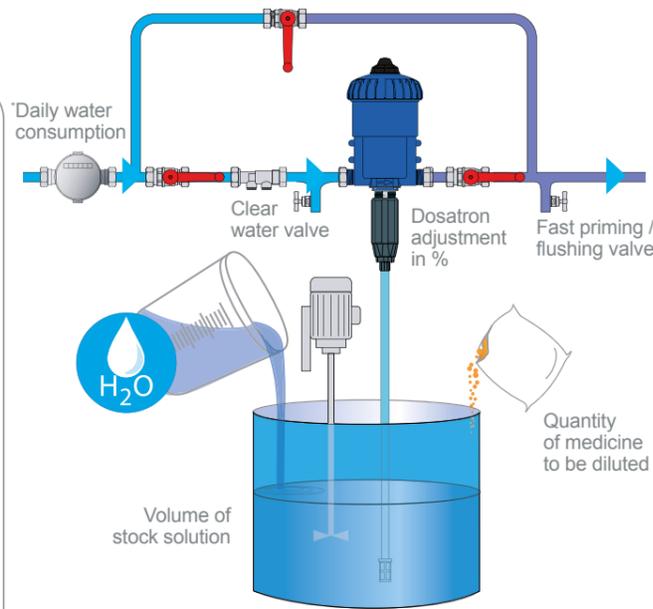
Four methods for establishing your consumption :

- 1 Consumption statistics based on age/weight (relatively inaccurate).
- 2 Check of water meter or your water monitoring system over 24-hour period (or less for dose dependence medications) before medication.
- 3 Use Dosatron, for instance at 1% (injecting water) and check injected water volume for a period of 24 h or less for dose dependence treatments. This gives the exact stock solution volume (water + medicine) to be prepared for one day's treatment.
- 4 Piglets drinking behavior (dry feeding) : please remember that piglets will generally drink from 7 to 10 min per day max (treatment solubility and homogeneity from the tank to the drinker is an issue) with a water consumption peak between 13h & 18h.



### Medication procedure

- ▶ If possible, pre-dilute the medicine with tepid water (30 to 40°C) to improve powder solubility, adding powder to water (and not the other way around).
- ▶ If necessary, first add a compatible solubilizing agent (respect veterinary prescription regarding compatibility & quantity / e.g. : citric acid with tetracyclines).
- ▶ Increase Dosatron ratio to get a higher dilution rate in the stock solution. All dosing pumps should be able to dose up to 4 or 5%, sometimes even 10% dosing may be required to ensure a good solubility\*\* of specific medicines.
- ▶ Use a plastic dilution tank with an electric mixer and wait 30 to 45 min. before treating.
- ▶ Open the bypass valve feeding the Dosatron and close the bypass valve on the main water pipe.
- ▶ Use the fast priming valve located downstream to prime the Dosatron quickly. Close once priming is done and medication may begin (the strainer on the suction hose must be a few centimeters above the bottom of the tank).
- ▶ After treatment, systematically rinse out the tank filling it with water and let the Dosatron run and inject clear water for 24 h.
- ▶ Then close the Dosatron bypass valves while opening the main pipe valve.



### Quantity of Medicine "Q" to be prepared for 1 day

N : Number of animals to be treated (e.g.: 200 pigs).

P : Average body weight in kg (ex.: 40 kg).

Po : Medicine posology in mg/ml per kg of body weight (e.g.: 10 mg/kg).

Cm : Medicine active ingredient concentration (in %) (e.g.: 10%).

$$Q = N \times P \times P_o \times 100 / C_m \text{ (in \%)}$$

$$Q = 200 \times 40 \text{ kg} \times 10 \text{ mg} \times (100/10)$$

$$Q = 800\,000 \text{ mg} = 800 \text{ g}$$

### Volume of stock solution "V" for 1 day

C : Daily water consumption in liters (e.g.: 1,000 l)\*

R : Dosatron adjustment in % (e.g.: 4%)

V : Volume of stock solution (medicine+ water) for 1 day (in liters)

$$V = C \times R \text{ (in \%)} / 100$$

$$V = 1\,000 \times 4 / 100 = 40 \text{ liters}$$

### Conclusion

1. Prepare 800 g of medicine (Q)
2. Mix medicine with tepid water, up to 40 liters (V). (Check the solubility limits)\*\*
3. Adjust the Dosatron at 4%

*This example of calculation is for information only and Dosatron cannot be held responsible for any direct or indirect damage resulting from its use. In particular DOSATRON INTERNATIONAL SAS does not guarantee the correctness and completeness of this information. The information is given in its present state and without any guarantee. For more information, please contact us.*

### \*\*Solubility (acid-base classification)

#### Weak bases

Amoxicillin / Ampicillin / Quinolons / Flumequine / Sulfadimerazine / Sulfadimethoxin / Sulfadiazine / Vitamin C / Aspirin.

#### Weak acids

Colistine (strong base) / Erythromycin / Neomycin / Spiramycin / TMP / Macrolids Colistine (strong base) / Erythromycin / Neomycin / Spiramycin / TMP / Macrolids / Oxytetracyclin / Bromhexin / Tiamutin.

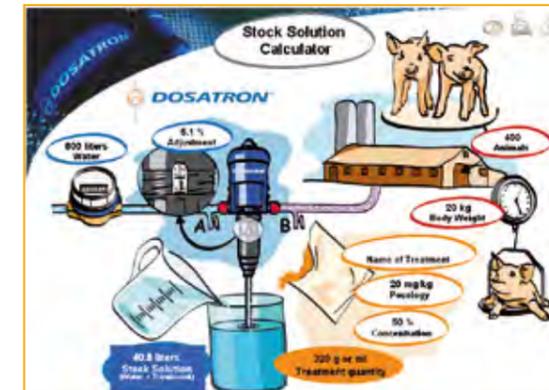
Acid medicine is more soluble in alkaline water. Alkaline medicine is more soluble in acid water.

Note : systematically consult the pharmaceutical companies to check the solubility of the medicine and if necessary the compatible solubilizing agents (e.g. : Citric acid for Tetracyclines).

These are just given as an indication. Please refer to recent local legislation on authorized medicines and always respect veterinary prescriptions.

## Stock solution calculator software for medication

For Personal Computers



For Smartphones & Tablets



Available in 15 languages

Calculate your Medication Stock solution with your Phone.

Send all results via Email or SMS

Identify your Dosatron Pump via the QR code scan (for 2014 Dosatron models) or via the Dosatron serial number to get maintenance or distributor information.

## The Dosatron Diaphragm Technology

Ideal for very low water flow (treatments from the very first days) and water pressure (header tanks), for water with minerals contents (long lasting motor).

### DIA

Water flow: 4.5 to 2500 l/h  
Operating pressure: 0.15 to 4 bar  
Dosage: 1 to 4 %

DIA4RE

## The Dosatron Piston Technology

**A safe bet (The most widely used technology in livestock):**  
The Dosatron Piston technology range has higher water flow possibility (up to 8000 l/h and more), a higher homogeneity & a simpler maintenance thanks to a lower number of spare parts.

### D25

Water flow: 10 to 2500 l/h  
Operating pressure: 0.3 to 6 bar  
Dosage: 0.2 to 2 %

D25RE2

D25RE5

Water flow: 10 to 2000 l/h  
Operating pressure: 0.3 to 4 bar  
Dosage: 3 to 10 %

D25RE10

### D8

Water flow: 500 to 8000 l/h  
Operating pressure: 0.15 to 8 bar  
Dosage: 0.2 to 2 %

D8RE2

## DOSATRON SELECTION CRITERIA

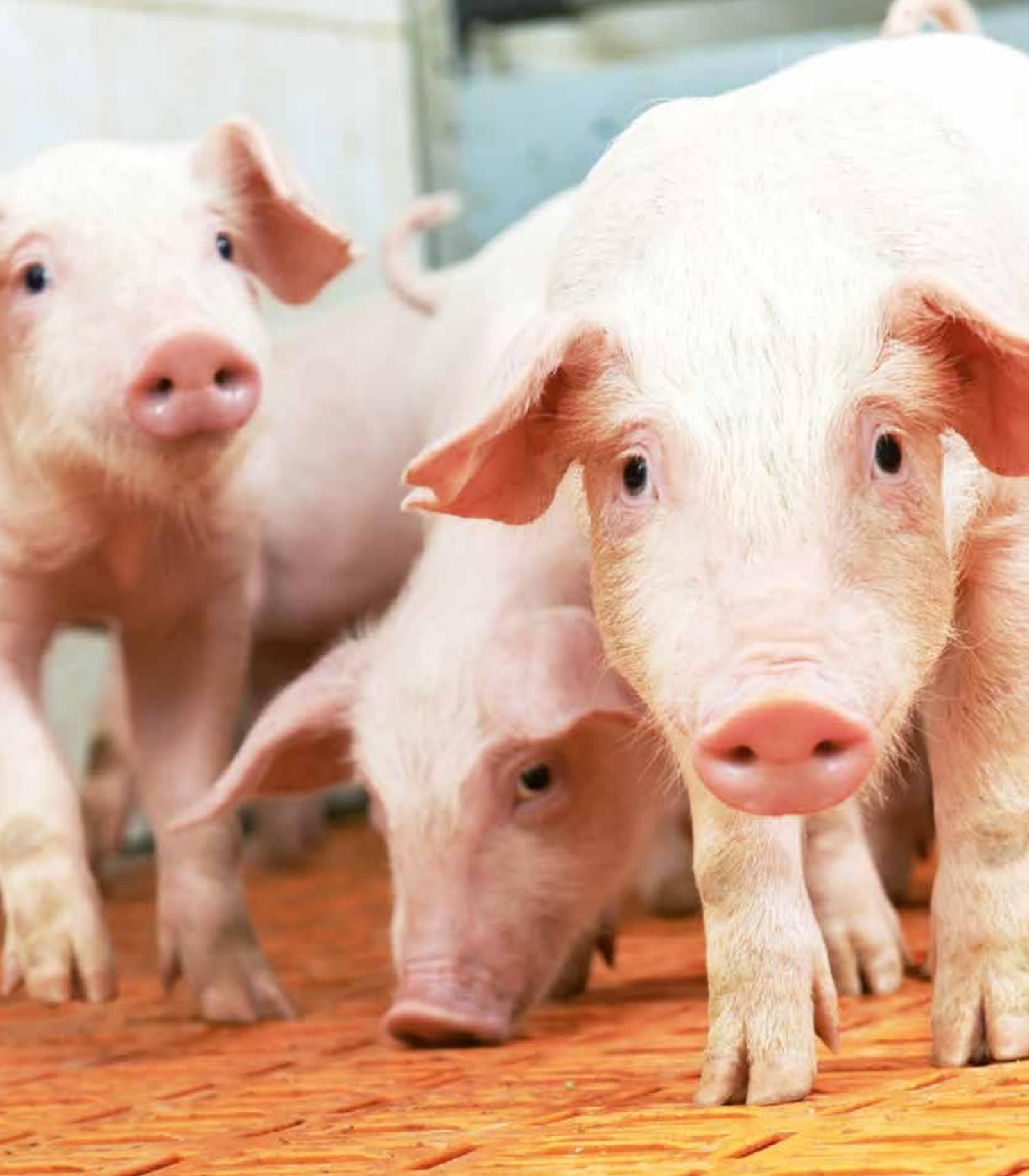
**Max water flow in l/h:** depending on max. number of animals to be treated. Peak water consumption should be taken into account (not average consumption): ~ max 60% of the drinkers are activated at the same time.

**Min water flow in l/h:** important for treatments the very first days and for small groups.

**Min water pressure:** header tanks height.

**Max dosing rate in %:** Dosage up to 4 or 5% are highly recommended when using oral powders and for the pipe sanitation.

**Water quality:** mineral contents (iron, calcium, sand..) leading to wearing & corrosion of equipments (water meters, pumps, drinking systems).



## DRINKING WATER VACCINATION

For a long time now, drinking water has proved to be the easiest way of administering medicines, acids and supplements. However, there are basic rules that should be respected to ensure effectiveness of water vaccination.

# ILEITIS VACCINATION THROUGH DRINKING WATER



**DOSATRON meets your needs**

**For weaners ◀**

**For barns up to 4000 pigs ◀**

**For water flows from 4,5 l/h to 8 m<sup>3</sup>/h & more ◀**

**For water pressures from 0.15 bar (1.5 m height) to 8 bar ◀**

A SOLUTION FOR YOUR WATER VACCINATION NEEDS



The easiest way to administer live vaccines

Safer than through header tanks

Less labour required

Less stress for pigs

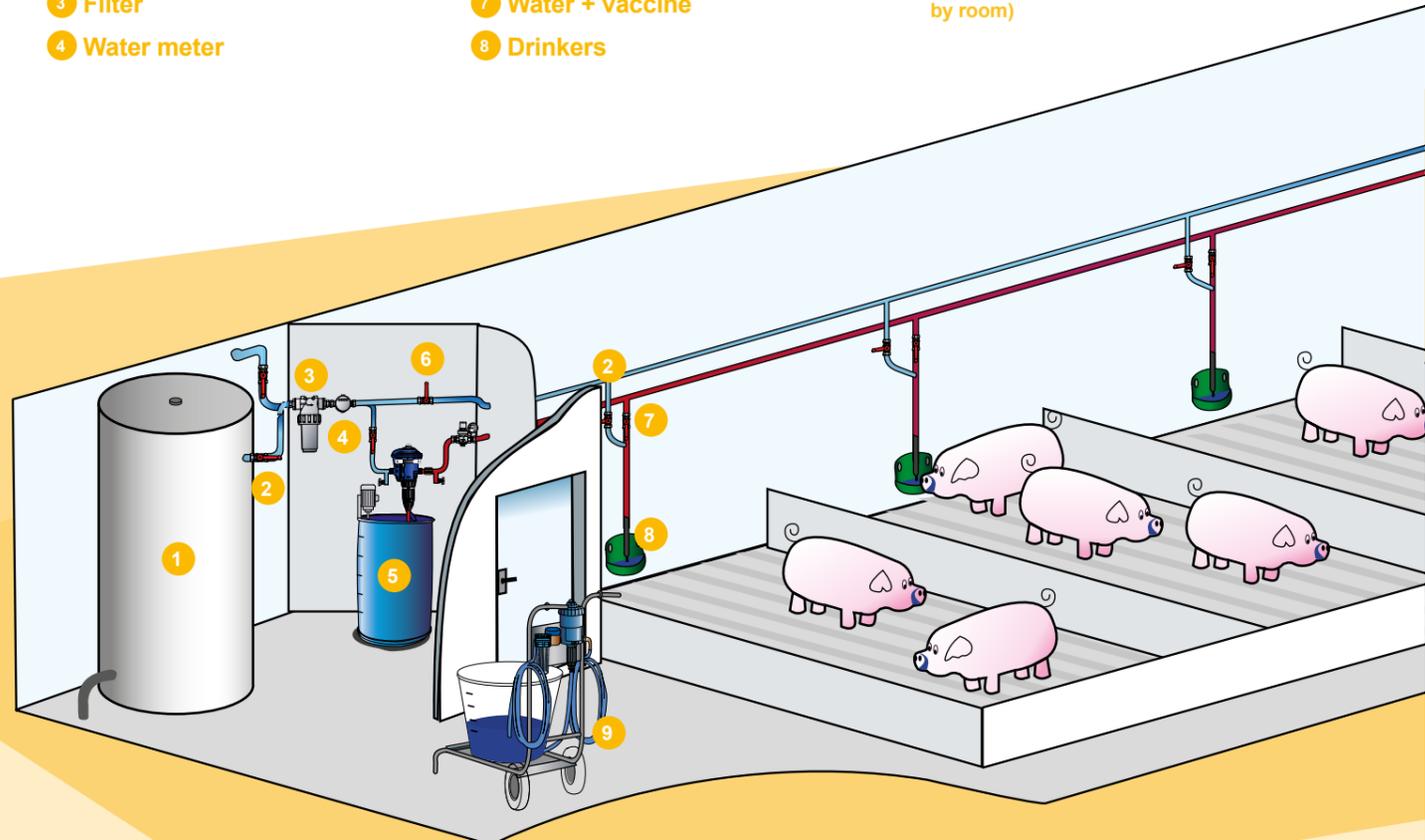
Precise & homogeneous dosing



## Principle of installation

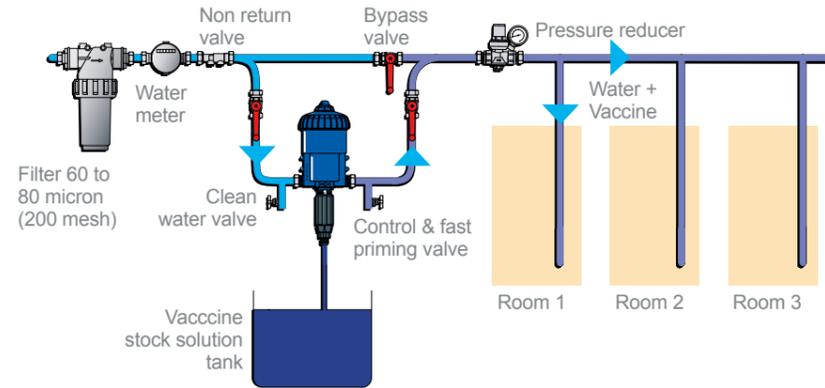
- 1 Pressure tank
- 2 Clear water
- 3 Filter
- 4 Water meter
- 5 Stock solution tank
- 6 Bypass valve (x3)
- 7 Water + vaccine
- 8 Drinkers

- 9 Vaccination cart  
Mobile installation for barns without double piping installation (quick coupling for vaccination by room)

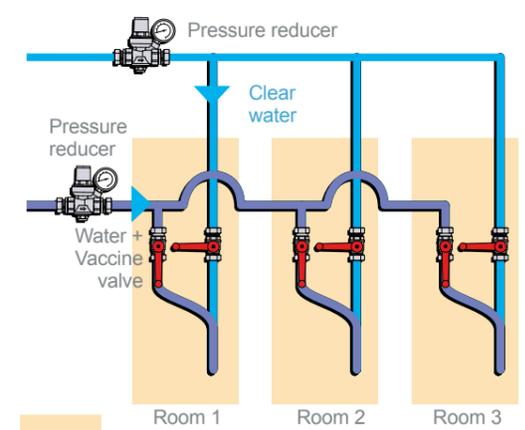


## Water system installations (In case of direct supply from a well pump, install pressure tank upstream)

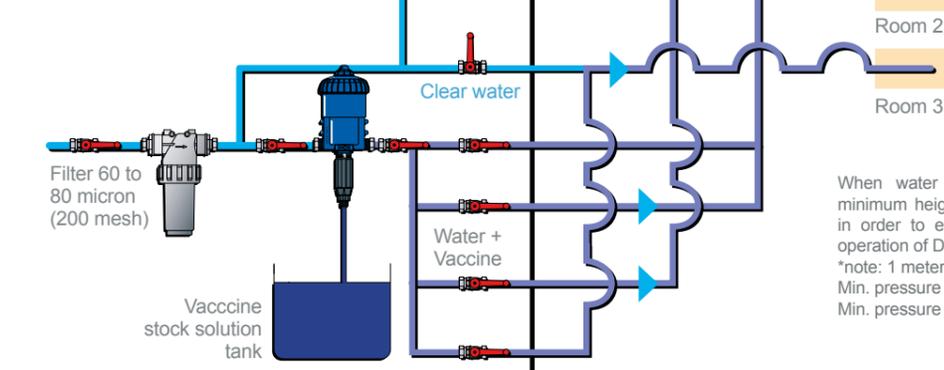
### A Standard installation (one treatment for the complete barn)



### B Double piping installation (treatment by room)



### C Multi-piping by room



When water comes from a header tank, allow minimum height between tank and the drinking line in order to ensure minimum pressure\* for correct operation of Dosatron pump and troughs.  
\*note: 1 meter = 0.1 bar  
Min. pressure D25 range = 0.3 bar  
Min. pressure DIA range = 0.15 bar



## Advantages of vaccination through drinking water (when drinking water is recommended)

- ▶ Reduction of animal and human stress, time, costs and effort compared to individual vaccinations<sup>(1)</sup>.
- ▶ Elimination of the possible transmission of blood-borne infections such as PRRS virus via multiuse needles and the reduction of injection site reactions and needles retained in carcasses<sup>(2)</sup>.
- ▶ Oral mass vaccination methods have been widely used on poultry farms for many years and they will probably become more widely used on pig farms<sup>(3)</sup>.

<sup>(1)</sup> Dr. Steven McOrist "Ileitis - one Pathogen, several Diseases"; Boehringer Ingelheim; June 2004 - <sup>(2)</sup> "Ileitis..." op. cit. - <sup>(3)</sup> "Ileitis..." op. cit.

## Dosatron advantages over traditional header tanks

In traditional header tanks, water temperature & quality, antibiotic residues or disinfectants, can inactivate live vaccines. **With Dosatron the vaccines will be diluted first in safe conditions, with low temperature non chlorinated water + sodium thiosulphate and a blue die\*, into a specific plastic tank used only for vaccination.**

- ▶ Lower risk of handling and dosing mistakes compared to traditional header tanks.
- ▶ No risk of drinking water shortage after vaccination: when the vaccine stock solution is finished, Dosatron will inject a small amount of air into the water line but pigs will still be supplied with water.
- ▶ No risk of over dilution of the vaccine solution due to automatic filling of the header tanks still working during vaccination.
- ▶ Self priming.
- ▶ Good homogeneity even at a low flow.
- ▶ Precise dosing regardless of variations in flow or pressure which may occur in the main line.
- ▶ Fits easily into existing watering systems.

## HEADER TANK OR MAIN WATER SYSTEM INSTALLATION



The easiest way to administer live vaccines

Better protection of the vaccine titre than with header tank (a specific Dosatron & plastic tank can be used for vaccination only)

Less labour required

Less stress for pigs

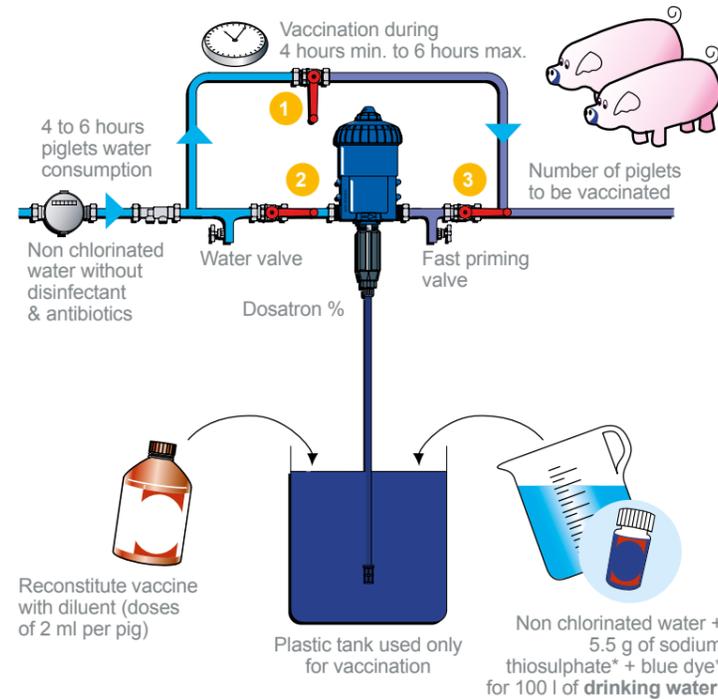
Precise & homogeneous dosing

## ■ Ileitis vaccination through drinking water

### Water consumption estimate for vaccination

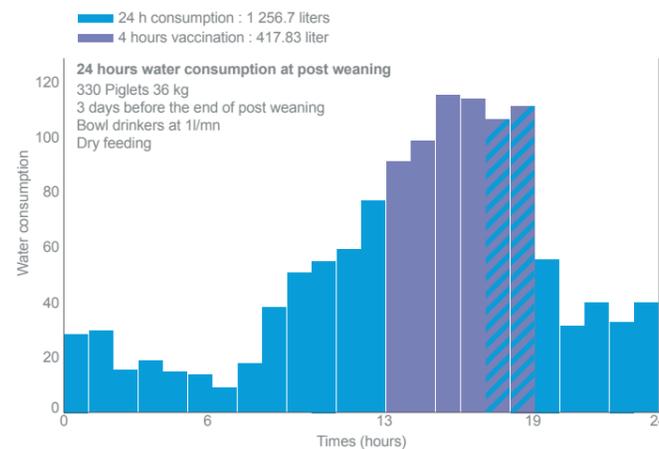
(based on a 4 hours vaccination period between 13h and 17h)

Body weight	Average drinking water volume per pig	
	within 24 hours	within 4 hours*
7 - 9 kg	1.2 l	360 ml
9 - 12 kg	1.4 l	420 ml
12 - 15 kg	1.7 l	510 ml
15 - 17 kg	2.1 l	630 ml
17 - 20 kg	2.5 l	750 ml
20 - 23 kg	3.0 l	900 ml
23 - 26 kg	3.4 l	1.02 l
26 - 30 kg	3.7 l	1.11 l
30 - 34 kg	4.1 l	1.23 l
34 - 38 kg	4.5 l	1.35 l
38 - 42 kg	4.9 l	1.47 l
42 - 46 kg	5.3 l	1.59 l
46 - 50 kg	5.8 l	1.74 l
50 - 55 kg	6.3 l	1.89 l
55 - 60 kg	6.8 l	2.04 l
60 - 65 kg	7.2 l	2.16 l
65 - 70 kg	7.6 l	2.28 l
70 - 75 kg	8.0 l	2.40 l
75 - 80 kg	8.3 l	2.49 l
80 - 85 kg	8.6 l	2.58 l
85 - 90 kg	8.9 l	2.67 l
90 - 95 kg	9.2 l	2.76 l
95 - 105 kg	9.3 l	2.79 l



\* Use sodium thiosulphate and blue dye recommended by vaccine suppliers.

**Vaccine stock solution estimate example:**  
 water consumption = 200 L,  
 Dosatron % = 5 %  
 ► vaccine stock solution volume =  
 5 % of 200 L = 10 L



\*Different tests made by Dosatron have shown that postweaning consumption for 4 hours between 13h and 17h should represent around 30 % of the daily consumption

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### Recommendations

#### A – Preparation before vaccination

1. Follow the recommendations from the veterinary.
2. Vaccinate only healthy pigs.
3. If any other additive than chlorine is added to drinking water (e.g.: hydrogen peroxide, chlorine dioxide...), please contact your veterinary before vaccination.
4. Nipple or Bowl drinker flow should be checked before vaccination.
5. Stop antibiotics 3 days before and 3 days after vaccination (including feed, injection and water).
6. Existing chlorine into water (vaccination tank and drinking water system) has to be neutralised with sodium thiosulphate. It requires 5.5 g of sodium thiosulphate to neutralised 100 liter of drinking water. E.g.: one vial of Thiosulfate Blue is sufficient to treat 500 litres of drinking water. With a Dosatron set at a ratio of 2% one vial of Thiosulfate Blue should be used to make 10 litres of stock solution.
7. Water consumption estimate for a 4 hours vaccination period : 1 day before vaccination, run a blind vaccination (water only in the plastic tank). For example, start the Dosatron at 13H and stop it at 17H. The volume of water injected by Dosatron will be the exact volume of vaccine stock solution to prepare the day of vaccination.

#### B – Vaccine stock solution preparation

1. Live vaccines should be stored at a temperature between 2 & 8°C.
2. Fill the vaccination tank with non chlorinated fresh water up to the estimated volume. Adjust Dosatron at the same % as during the blind vaccination. Then add the sodium thiosulphate\* used at 5.5 g per 100 liter of drinking water + a blue dye\*.
3. Reconstitute the required number of lyophilised vaccine doses with diluent, shake well and then transfer it into the vaccination tank.

#### C – Vaccination timing

1. Run the vaccination for 4 hours minimum to 6 hours maximum (e.g.: from 13H to 17H).
2. Run the Dosatron bypass by opening valve 2 and 3, and closing valve 1.
3. Prime DOSATRON suction pipe by opening/ closing the fast priming valve downstream.
4. Fill the main water distribution lines with vaccine by bleeding water from pen drinkers at the end of barn farthest away from the proportioner. Wait for light blue water to appear.
5. After four hours, check if the vaccine stock solution has been fully consumed.
6. Flush the DOSATRON and the line injecting water.
7. Destroy the empty vaccine vials, caps, unused vaccines and flush the equipment.
8. Wait 3 days after vaccination if you wish to restart another treatment or consult the veterinary

### The Dosatron Diaphragm Technology

Ideal for very low water flow (treatments from the very first days) and water pressure (header tanks), for water with minerals contents (long lasting motor).

#### DIA

Water flow: 4.5 to 2500 l/h  
 Operating pressure: 0.15 to 4 bar  
 Dosage: 1 to 4 %

**DIA4RE**

### The Dosatron Piston Technology

**A safe bet (The most widely used technology in livestock):**

The Dosatron Piston technology range has higher water flow possibility (up to 8000 l/h and more), a higher homogeneity & a simpler maintenance thanks to a lower number of spare parts.

#### D25

Water flow: 10 to 2500 l/h  
 Operating pressure: 0.3 to 6 bar  
 Dosage: 0.2 to 2 %

**D25RE2**

**D25RE5**

Water flow: 10 to 2000 l/h  
 Operating pressure: 0.3 to 4 bar  
 Dosage: 3 to 10 %

**D25RE10**

#### D8

Water flow: 500 to 8000 l/h  
 Operating pressure: 0.15 to 8 bar  
 Dosage: 0.2 to 2 %

**D8RE2**

## DOSATRON SELECTION CRITERIA

**Max water flow in l/h:** depending on max. number of animals to be treated. Peak water consumption should be taken into account (not average consumption): ~ max 60% of the drinkers are activated at the same time.

**Min water flow in l/h:** important for treatments the very first days and for small groups.

**Min water pressure:** header tanks height.

**Max dosing rate in %:** Dosage up to 4 or 5% is highly recommended to optimize volume of vaccination stock solution.

**Water quality:** mineral contents (iron, calcium, sand..) leading to wearing & corrosion of equipments (water meters, pumps, drinking systems).



## DRINKING WATER ACIDIFICATION

The current evolution of some local legislation which prohibit the use of Antibiotic Growth Promoters (AGP) in feed, leads pig producers to use drinking water more frequently to administer preventive treatments.

Numerous acids or combinations of organic acids (formic, propionic, lactic, etc.) have appeared on the market over a period of time. Used in the pig sector, they should improve digestibility and guarantee an anti-bacterial effect on the E.Coli, salmonella and clostridium present in the intestine.

# ACIDIFICATION THROUGH DRINKING WATER



**DOSATRON meets your needs**

**For weaners & finishers ◀**

**For barns up 4000 pigs ◀**

**For water flows from 4,5 l/h to 8 m<sup>3</sup>/h ◀**

**For water pressures from 0.15 bar (1.5 m height) to 8 bar ◀**

A SOLUTION FOR ACIDIFICATION THROUGH DRINKING WATER



Improved digestibility

Anti-bacterial effect

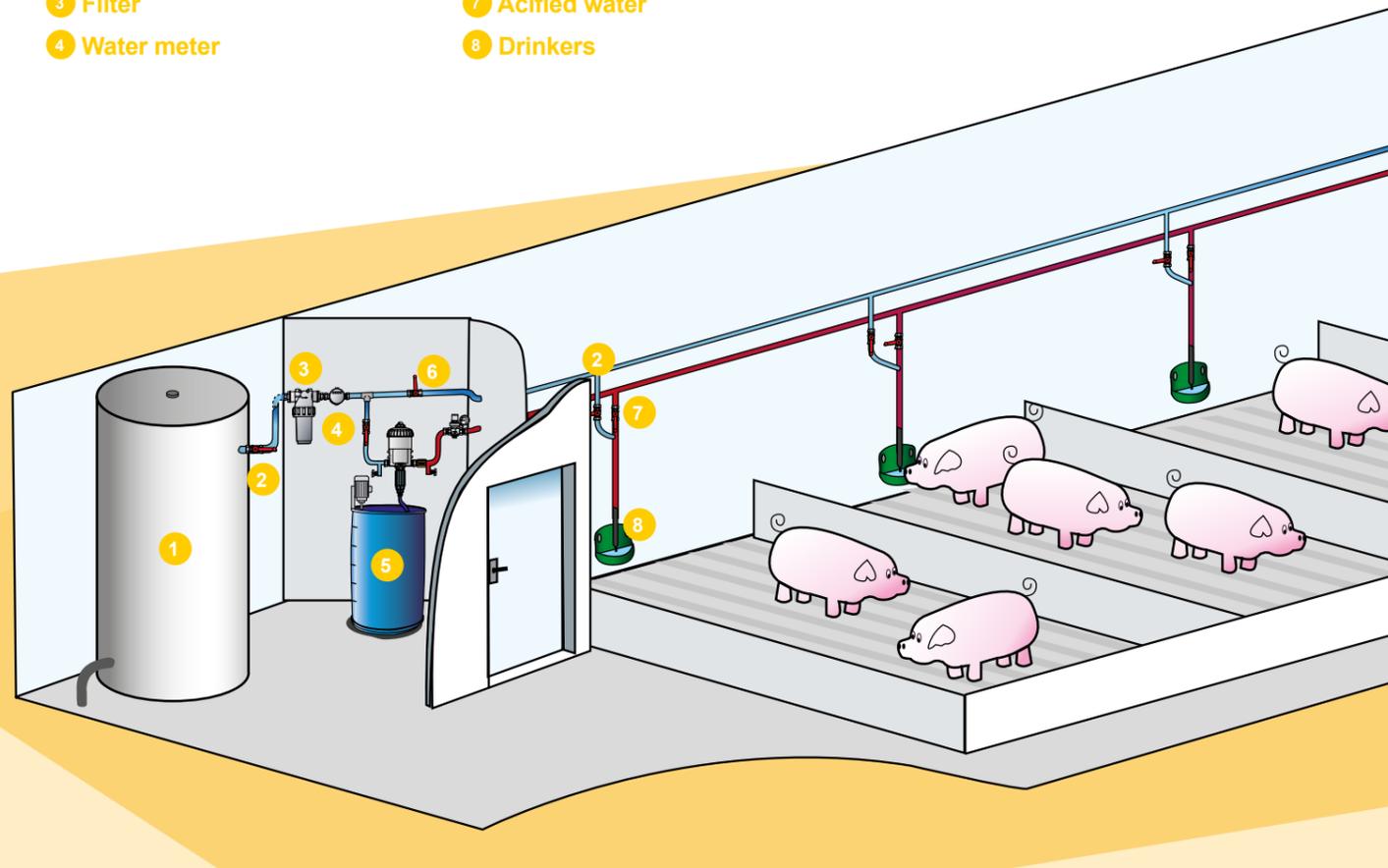
No residues in  
carcasses or faeces

Safe & Precise dosing

Easy to use

## Principle of installation

- 1 Pressure tank
- 2 Clear water
- 3 Filter
- 4 Water meter
- 5 Acid
- 6 Bypass valve (x3)
- 7 Acidified water
- 8 Drinkers

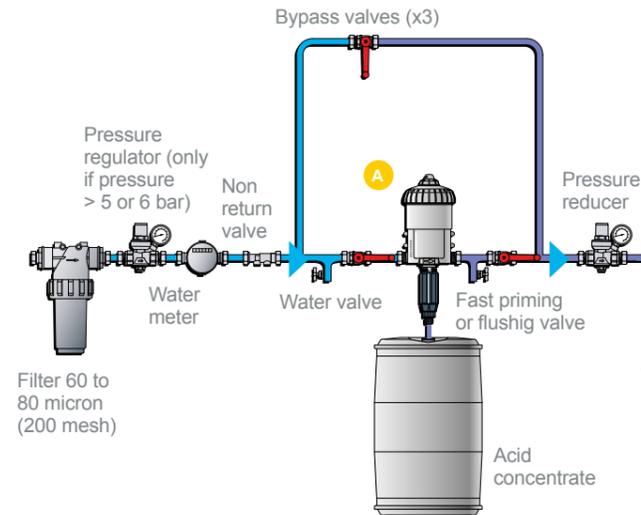


## Advantages of acidification

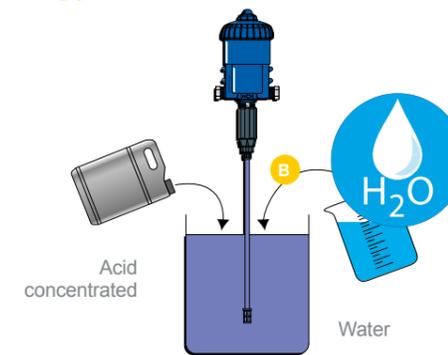
- ▶ Safe and precise dosing with broad ranges in terms of water flow and pressure.
- ▶ Easy installation and use (without electricity).
- ▶ Excellent homogeneity (even at low water flow: small number of pig or young animals).
- ▶ Security for user and environment: Dosatron's technology does not present any risk of over-dosing, splashing or loss of chemical. The suction hose containing the concentrated chemical works by depression (suction) while other technologies inject the chemical under pressure ("pulsatory" effect, being a risk in case of leaks).
- ▶ Dosatron can also be used for such organic acids in feed manufacturing process during rehydration: water+acid spraying in the mixer. Please, contact Dosatron for any information about recommended models & installations.
- ▶ Easy maintenance (only 35 spare parts compared to more than 100 parts in certain competitors' pumps).

## Use of the Dosatron

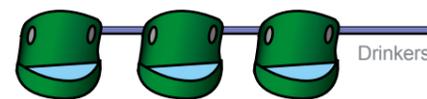
### A D25 AO Special Acids Range (for non diluted acids)



### B Standard Dosatron (for dosing pre-diluted acids\*)



Always add acid into water, never water into acid !  
 \*Example for pre-dilution by 5: for a dosage of 2 ml per litre of drinking water, pre-dilute 1 litre of acid with 4 litres of water (pre-dilution by 5) and set the Dosatron at 1% (1% / 5 = 0.2% or 2 ml per litre).  
 Respect the safety regulations with regard to stocking and handling the acids!



## Evolution of the concentrations

Higher concentrated acids undoubtedly represents an economic and practical response to current requirements, provided that safety requirements are respected and that dosing devices adapted to these acids' aggressiveness are used.

## The Dosatron Diaphragm Technology

Ideal for very low water flow and water pressure, for water with minerals contents. External injection (the acid is injected at the outlet of the dosing pump) is protecting the motor part.

### DIA (For pre-diluted acids)

Water flow: 4.5 to 2500 l/h  
 Operating pressure: 0.15 to 4 bar  
 Dosage: 1 to 4 %

**DIA4RE**

## The Dosatron Piston Technology

**A safe bet (The most widely used technology in livestock):**  
 The Dosatron Piston technology range has higher water flow possibility (up to 8000 l/h and more), a higher homogeneity & a simpler maintenance thanks to a lower number of spare parts.

### D25 AO Organic Acid Range

(For non diluted acids)

Water flow: 10 to 2500 l/h  
 Operating pressure: 0.3 to 6 bar  
 Dosage: 0.1 to 0.9 %  
 0.2 to 2 %

**D25RE09AO**

**D25RE2AO**

### D25 (For pre-diluted acids)

Water flow: 10 to 2500 l/h  
 Operating pressure: 0.3 to 6 bar  
 Dosage: 0.2 to 2 %  
 1 to 5 %

**D25RE2**

**D25RE5**

Water flow: 10 to 2000 l/h  
 Operating pressure: 0.3 to 4 bar  
 Dosage: 3 to 10 %

**D25RE10**

### D8 (For pre-diluted acids)

Water flow: 500 to 8000 l/h  
 Operating pressure: 0.15 to 8 bar  
 Dosage: 0.2 to 2 %

**D8RE2**

## DOSATRON SELECTION CRITERIA

**Max water flow in l/h:** depending on max. number of animals to be treated. Peak water consumption should be taken into account (not average consumption): ~ max 60% of the drinkers are activated at the same time.

**Min water flow in l/h:** important for treatments the very first days and for small groups.

**Min water pressure:** header tanks height.

**Dosing rate in %:** (organic acid dosage & concentration); We recommend D25 AO ideal for pure or high concentration acid.

**Water quality:** mineral contents (iron, calcium, sand..) leading to wearing & corrosion of equipments (water meters, pumps, drinking systems).