

# TECHNICAL BOOK

Discover the potential of the **EasyDos system**



**IN THE NEXT PAGES YOU WILL FIND OUT WHY BOILER PRODUCERS,  
PROFESSIONALS AND EUROPEAN DIRECTIVES SUPPORT THE USE OF A  
PROPORTIONAL DOSING SYSTEM**

# WHY INSTALL A PROPORTIONAL POLYPHOSPHATE DOSING SYSTEM?

## WHAT HAPPENS IN THE WATER?

Calcium and magnesium are naturally contained in the water of domestic water systems.

During the heating of the water, a chemical process is **triggered whereby the calcium and magnesium carbonate are deposited and encrust the heat exchangers of the boilers, or other household water appliances** such as washing machines, dishwashers, etc., including the systems themselves.



*The dosing device is always necessary as it prevents both encrustations and corrosion.*

## THE USE OF PROPORTIONAL DOSING SYSTEM IS ALSO SUPPORTED BY:

- **European directives** ask us all to improve our boilers efficiency to reduce CO<sup>2</sup> emissions to stop global warming
- **Boiler producers** are pushing to treat the water to protect their devices
- **Professionals** face real problems and want to bring qualified solutions to their clients



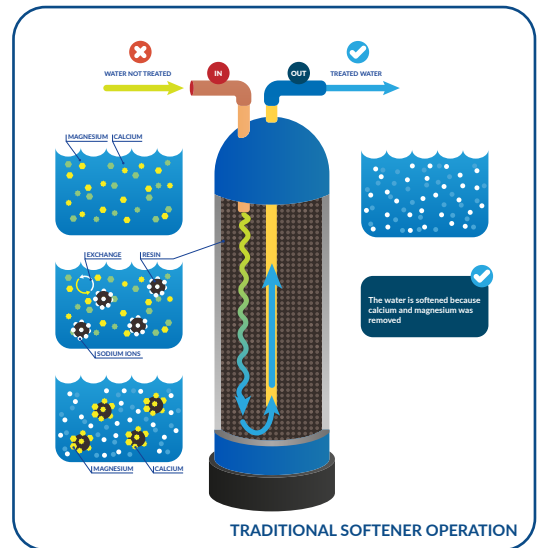
# IN THE WORLD OF PROTECTING HEAT GENERATORS THERE ARE MANY SOLUTIONS THAT DIFFER IN VARIOUS ASPECTS

## EXPENSIVE AND BULKY SOLUTIONS

### WATER SOFTENER

It is a functioning and effective solution.

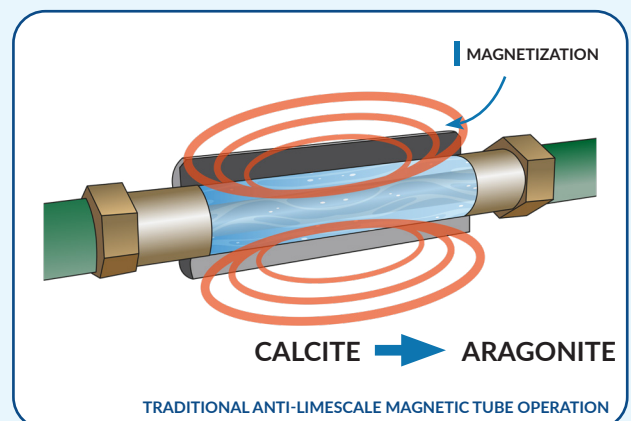
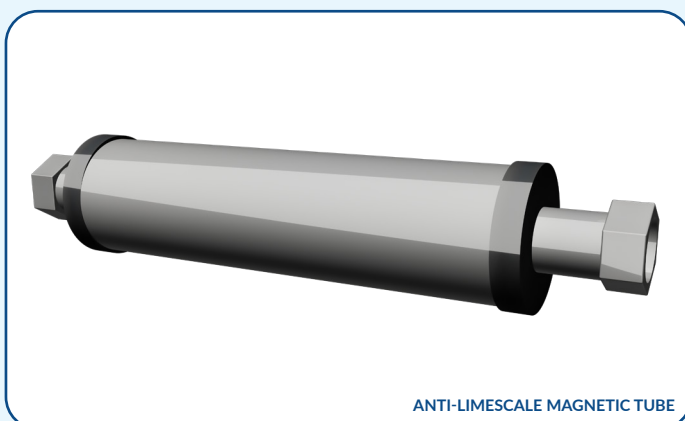
However, it is particularly expensive, it requires space that is not always available and must be adjusted with a residual hardness that partially encrusts the boilers, reason for which it is always recommended to add a proportional doser under the boiler.



## DOUBTFUL SOLUTIONS

### ANTI-LIMESCALE MAGNETIC TUBE

It has been designed to break the calcium and magnesium crystals, preventing the formation of limescale. All available studies show that this occurs in very rare cases and therefore the system is protected only in 0.01% of cases. Electrolytic descalers also perform a similar function, but there is no evidence that confirms their effectiveness.



## COMMON BUT IMPERFECT DOSING SOLUTIONS

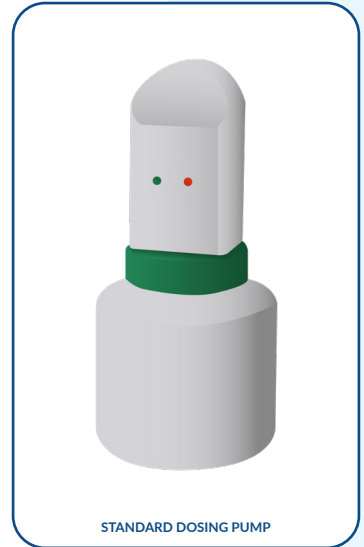
### DOSING PUMP

The dosing pump is characterized by compact dimensions, though it is not always easy to make it adaptable to different situations with little space under the boiler.

**But the absence of a freely rotatable 3-way connection** or an elongated connection to the boiler and the presence of screws to adjust the connection in the necessary position, **make it inflexible and very complicated to assemble.**

It does not have a sand filter and visual indication of the end of cartridge, therefore **it is not possible to understand when the polyphosphate** (very diluted) runs out, risking to keep the pump running without an anti-scale and anti-corrosion solution. The charging time is short: about 1-2 months under standard conditions.

About the **priming** (dosing) they start at least from **3L/min** which makes these appliances too often useless, which means no protection!



STANDARD DOSING PUMP

### DOSER WITH PREMIXED CARTRIDGE

The refill of the doser with premixed cartridge lasts just over a month and **gives no guarantee in terms protection against limescale buildup and accuracy of the dosage.**

In fact, the **polyphosphate** present inside the doser is **diluted** and the dosing system is not renewed with the replacement of the refill.

**Assembly is also quite difficult**, due to the absence of attachments that would help assembly in small spaces.



DOSER WITH PREMIXED CARTRIDGE

### DOSER WITH CRYSTAL SPHERES

The crystal spheres doser is particularly **complicated to assemble**, as it has medium-large dimensions and no attachment which favors assembly in situations of limited space.

These cost-effective devices **do not protect boilers** because they do not have a proportional dosing system.

The cartridge lasts about 4-6 months and is rarely equipped with a visual indication of the end of refilling. **Though too often, crystals cease to be consumed by water and last for years.**

It's a different way of not protecting the boiler.



DOSER WITH CRYSTAL SPHERES

# EasyDos 3-way

PROPORTIONAL POLYPHOSPHATE  
DOSING SYSTEM WITH FILTER

**NEW  
GENERATION**  
NUOVA GENERAZIONE

FREELY ADJUSTABLE 360  
DEGREE CONNECTION  
FOR ANY KIND OF  
INSTALLATION

DIRECT  
CONNECTION  
UNDER THE  
BOILER

BUILT-IN SHUT-OFF  
VALVE

EASY FIT:  
NO TOOLS  
REQUIRED FOR  
INSTALLATION

LONG DURATION  
OF DOSAGE



## THE NEW DOSING MASTER

- **Cartridge with an always new dosing mechanism:** unlike everything else on the market, the entire V2 mechanism (Venturi and Vortex) is replaced with each change of cartridge, which guarantees optimal dosing. This avoids clogging due to the consistency of the polyphosphate
- **More precision in dosing,** thanks to the dual system (Venturi and Vortex)
- **No overdose:** the system absorbs pressure in the event of water hammers



EASY  
REFILL



MORE PRECISE  
DOSING



NEW DOSAGE AND FILTER  
WITH EACH REFILL



INTEGRATED  
FILTER



Proportional hydrodynamic doser of food-grade polyphosphates for anti-scale and anti-corrosion treatment in domestic hot water production systems and connected devices. With integrated 90 micron stainless steel filter.



### THE SIMPLEST ASSEMBLY ON THE MARKET

- **Hassle-free assembly** on any boiler model, thanks to the 1/2" 3-way universal connection
- **Attachment freely rotatable 360°** and not fixed or in 90° movements.
- **Ultra-compact dimensions:** it adapts to the most difficult assemblies.
- **No screws and lock nuts** to attach/detach the doser bowl in 5 seconds, thanks to the EasyFit system.
- **Built-in shut-off valve** that cuts off the water: it does not require additional valves

### MAXIMUM EASE OF MAINTENANCE AND USE FOR THE END USER

- **Anti-friction valve:** does not block over time and can be operated without tools.
- **Intuitive replacement of the refill,** thanks to the absence of rings or a bayonet connection, just unscrew the bowl.
- **Long-lasting dosage:** about one year with only one refill.

### BENEFITS

- Designed to protect boilers, water heaters, washing machines, dishwashers, general heat exchangers from calcareous deposits and corrosion
- Energy saving thanks to the absence of deposited limestone
- Maintain water potability

### TECHNICAL FEATURES

3-WAY IN/OUT FITTINGS	IN 1/2" F - OUT 1/2" F
MAX PRESSURE	6 bar
FILTRATION	90 µm
FLOW RATE (ΔP 0,2 BAR)	2 m³/h
ROOM TEMPERATURE	5 - 40 °C
USE	Potable/Technical
MATERIAL	PA-SAN-PE
REFILL CAPACITY	45 m³/Refill
BUILT-IN SHUT-OFF VALVE	Yes
DOSAGE LESS THAN	5 mg/L
DIMENSIONS	H: 185 mm L: 110 mm P: 140 mm

EasyDos 3-Way - CODE 400101010

PACK 6 PCS

# EasyDos Line

PROPORTIONAL POLYPHOSPHATE  
DOSING SYSTEM WITH FILTER

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NUOVA GENERAZIONE

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FOR ANY KIND OF  
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BUILT-IN SHUT-OFF  
VALVE

LONG DURATION  
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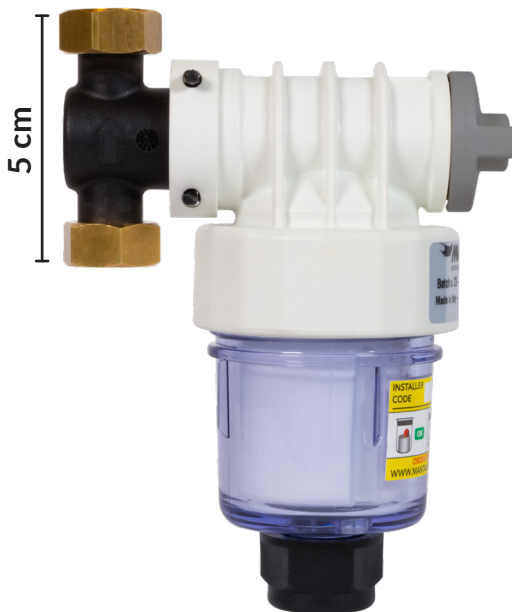
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### TECHNICAL FEATURES

IN/OUT FITTINGS	IN 1/2" F - OUT 1/2" F
MAX PRESSURE	6 bar
FILTRATION	90 µm
FLOW RATE (ΔP 0,2 BAR)	2 m³/h
ROOM TEMPERATURE USE	5 - 40 °C
MATERIAL	Potable/Technical PA-SAN-PE
REFILL CAPACITY	45 m³/Refill
BUILT-IN SHUT-OFF VALVE	Yes
DOSAGE LESS THAN	5 mg/L
DIMENSIONS	H: 148 mm L: 70 mm P: 105 mm

# EasyPhos 3-way

PROPORTIONAL POLYPHOSPHATE  
DOSING SYSTEM WITH FILTER

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BUILT-IN SHUT-OFF  
VALVE

**NEW  
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LONG DURATION  
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## AN ALWAYS NEW DOSING MECHANISM

- **Always new dosing mechanism:** unlike everything else on the market, the entire V2 mechanism (Venturi and Vortex) is replaced with each change of cartridge, which guarantees optimal dosing.
- **Dosing and filter in the same appliance.**
- **More precise dosing thanks to the dual system (Venturi and Vortex).**
- **No screws and lock nuts** to attach/detach the dosing bowl in 5 seconds, thanks to the EasyFit® system.
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3-WAY 1/2"



3-WAY 3/4"

## MAXIMUM EASE OF ASSEMBLY AND MAINTENANCE

- **Attachment freely rotatable over 360°** and not fixed or in 90° movements: you can mount it vertically or horizontally.
- **No screws and lock nuts to attach/detach** the doser bowl in 5 seconds, thanks to the EasyFit® system.
- **Built-in shut-off valve** that cuts off the water: it does not require additional valves.
- **Anti-friction valve:** does not harden over time and can be operated without tools, plus it's extremely intuitive to use.
- **Just unscrew to replace the cartridge,** since there are no ring nuts or a bayonet connection.

## BENEFITS

- **Designed to protect** boilers, water heaters, washing machines, dishwashers, general heat exchangers from calcareous deposits and corrosion
- **Energy saving** thanks to the absence of deposited limestone
- **Maintain water potability**

## TECHNICAL FEATURES

3-WAY IN/OUT FITTINGS	IN 1/2" F OUT 1/2" F	IN 3/4" F OUT 3/4" F
MAX PRESSURE	6 bar	6 bar
FILTRATION	90 µm	90 µm
FLOW (ΔP 0,2 BAR)	2 m³/h	3 m³/h
ROOM TEMPERATURE	5 - 40 °C	5 - 40 °C
USE	Potable/Technical	Potable/Technical
MATERIAL	PA-SAN-PE	PA-SAN-PE
REFILL CAPACITY	130 m³/Refill	130 m³/Refill
BUILT-IN SHUT-OFF VALVE	Yes	Yes
DOSAGE LESS THAN:	5 mg/L	5 mg/L
DIMENSIONS	H: 295 mm	H: 295 mm
	L: 110 mm	L: 110 mm
	P: 140 mm	P: 140 mm

EasyPhos 3-Way 1/2" CODE 400102002

EasyPhos 3-Way 3/4" CODE 400102010

PACK 6 PCS

PACK 6 PCS

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DOSING SYSTEM WITH FILTER

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LINE 1/2"

LINE 3/4"

LINE 1"

### BENEFITS

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### TECHNICAL FEATURES

LINE IN/OUT FITTINGS	IN 1/2" F OUT 1/2" F	IN 3/4" F OUT 3/4" F	IN 1" F OUT 1" F
MAX PRESSURE	6 bar	6 bar	6 bar
FILTRATION	90 µm	90 µm	90 µm
FLOW (ΔP 0,2 BAR)	2 m³/h	3 m³/h	3,5 m³/h
ROOM TEMPERATURE	5 - 40 °C	5 - 40 °C	5 - 40 °C
USE	Potable/Technical	Potable/Technical	Potable/Technical
MATERIAL	PA-SAN-PE	PA-SAN-PE	PA-SAN-PE
REFILL CAPACITY	130 m³/Refill	130 m³/Refill	130 m³/Refill
BUILT-IN SHUT-OFF VALVE	Yes	Yes	Yes
DOSAGE LESS THAN:	5 mg/L	5 mg/L	5 mg/L
DIMENSIONS	H: 258 mm	H: 280 mm	H: 280 mm
	L: 70 mm	L: 110 mm	L: 110 mm
	P: 115 mm	P: 115 mm	P: 115 mm

EasyPhos Line 1/2" CODE 400102101

PACK 6 PCS

EasyPhos Line 3/4" CODE 400102102

PACK 6 PCS

EasyPhos Line 1" CODE 400102103

PACK 6 PCS

# HOW DOES A PROPORTIONAL POLYPHOSPHATE DOSING SYSTEM WORK?

## WHAT DOES IT DO?

The operation of a proportional dosing system exploits the vacuum produced by the water passing through its bowl (Venturi effect), allowing the suction of a polyphosphate-based liquid solution that mixes in with the water.

## WHAT TECHNOLOGY DOES IT USE?

A forced water path (that includes the patented Vortex system) ensures that there is a **constant dosing of the solution**, even with the valve open at minimum or with a variable water flow.

**This does not happen when using mechanical dosing pumps.**

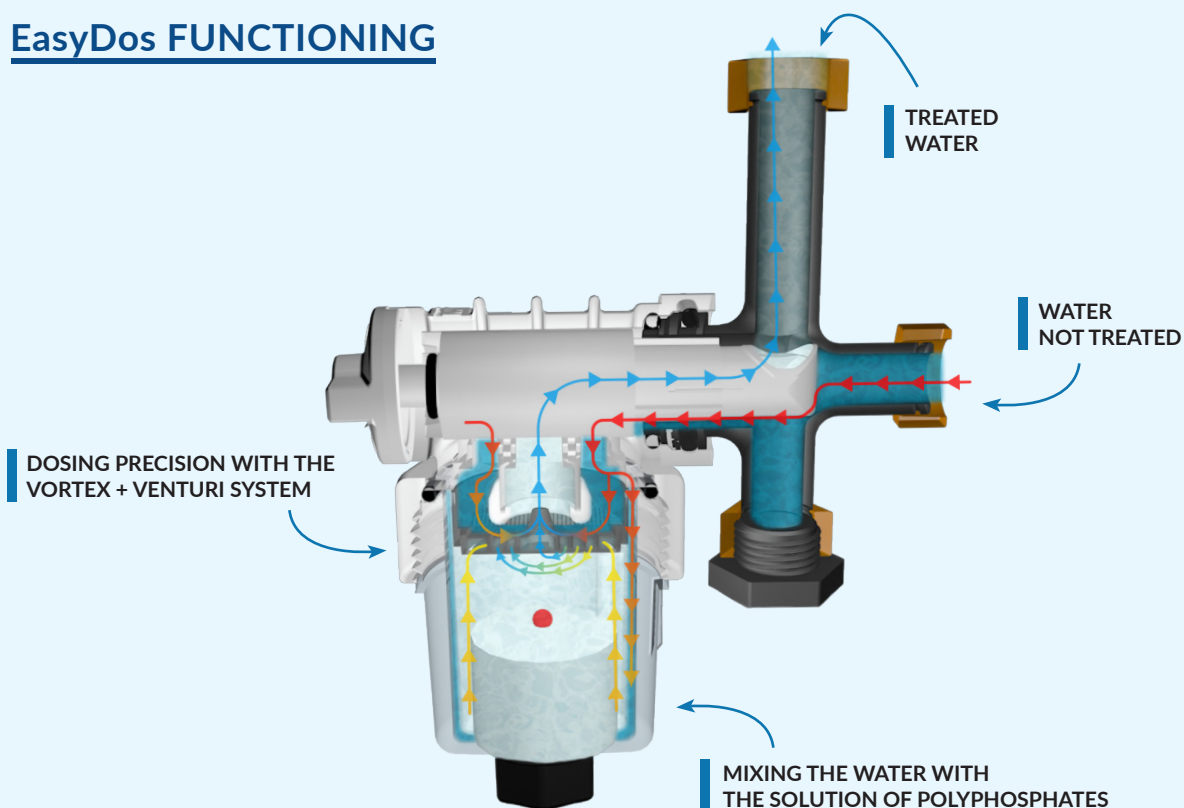
## WHAT ADVANTAGE DOES IT OFFER?

Proportional dosing, at any required water flow rate, **allows you to remain within the recommended concentration limits of the polyphosphates** dissolved in water to be used for drinking.

At the same time it allows to dose the quantity necessary to keep the **anti-limescale and anticorrosive effect active**, thereby lengthening the life of the household water appliances that benefit from the doser, keeping them in their initial operating conditions.

A proportional doser is ideal for installation in the service of wall-hung boilers, water heaters, boilers, dishwashers and washing machines.

## EasyDos FUNCTIONING



# COMPARISON BETWEEN PROTECTIVE DOSING SOLUTIONS

	Dosing pump	Doser with premixed cartridges	Doser with crystal spheres	EasyDos
<b>EASE OF ASSEMBLY</b>				
Dimensions	SMALL	MEDIUM	MEDIUM-LARGE	SMALL
Attachment freely rotatable 360° and not fixed or in 90° movements	X	X	X	✓
Direct connection under the boiler	RARE	RARE	X	✓
No screws to adjust the attachment in the necessary position	X	X	X	✓
<b>DOSAGE</b>				
Priming for starting dosage	AFTER 3 L/min	IMMEDIATE	IMMEDIATE	IMMEDIATE
Polyphosphate concentration	VERY DILUTED	DILUTED	PURE	PURE
Maximum precision thanks to double dosing system	X	X	DOUBTS ABOUT PROPORTIONALITY	✓
Operating time with one refill (standard condition)	1-2 MONTHS	1 MONTH	4-6 MONTHS	1 YEAR
Visual indication of the end of cartridge	X	X	RARE	✓
Include sand filter	X	X	RARE	✓
New dosing system and new filter with each refill	X	X	X	✓
No overdose in the presence of water hammer	✓	X	RARE	✓
<b>MAINTENANCE</b>				
Anti-friction valve: does not block over time and can be operated without tools	X	X	X	✓
Emergency cap included	X	X	X	✓



Who we are

## Manta Ecologica

Today, Manta Ecologica boasts over **45 years of Italian and European success**, with unique products dedicated to professionals.

Manta Ecologica always has an eye on **new high-tech products** and each of them brings great innovation to its area of intervention.

45



### **45 years of activity and technological development**

In 2022 the redefinition of proportional dosers and magnetic filters from the professionals' point of view: **Easy Revolution**



### **1 Specialisation:**

Production of equipment and chemicals for heating and air conditioning professionals



**Over 1,500** technical assistance services, installers and distributors served each year



**2,954 professionals** took the **Manta Academy** courses in the last 3 years

**11 boiler and equipment manufacturers:** the brands for which we have produced or are producing





**The Easy  
revolution  
was born to  
make your  
job easier.**





# Contacts

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