



Certified to NSF/ANSI/CAN 60



EndoSan®

AUTOMATED CONSTANT DOSING SYSTEMS

v1.4



EndoSan®

Automating Disinfection With Cutting-Edge, Stabilised Hydrogen Peroxide Dosing

Installing a Guardian Dosing System is the key to safeguarding your water with a consistent and controlled concentration of EndoSan.

EndoSan, a stabilised hydrogen peroxide solution, is injected directly into your water system, creating a powerful biocidal barrier against a wide range of micro-organisms.

EndoSan is compliant with the UK & EU BPR process and is legal for sale and use for disinfection of drinking water systems intended for humans and animals. Furthermore, the recommended constant dose ppm levels for EndoSan represent no risk to human and animal ingestion.

MARKET LEADING
ULTRA STABILISED
HYDROGEN PEROXIDE TECHNOLOGY

H₂O₂
HYDROGEN
PEROXIDE

EndoSan®

Discover the Benefits of EndoSan

- ▶ **Proven Killer of Legionella, E. coli, Pseudomonas and more!**
EndoSan is laboratory proven to effectively eliminate legionella bacteria to EN13623 standard, ensuring the health and safety of your water supply.
- ▶ **Effective Biofilm Remover**
Say goodbye to stubborn biofilm! EndoSan excels at removing biofilm, promoting cleaner and healthier water systems.
- ▶ **Non-Corrosive at Dose Rates**
Even at higher in-use dose rates, EndoSan remains widely compatible with the materials commonly used in water systems. This ensures the protection and longevity of your system, pipework, and equipment, without any corrosive consequences.
- ▶ **No Harmful By-Products**
EndoSan naturally degrades into only water and oxygen, leaving no harmful residues or by-products. It's also odourless, colourless, and tasteless, ensuring the quality of your water remains uncompromised.
- ▶ **Free of Alcohol and Chlorine**
Unlike traditional disinfectants, EndoSan is completely free from alcohol and chlorine, meaning no potential carcinogenic disinfection by-products, toxic gasses or time consuming neutralisation process.
- ▶ **Effective in Hot or Cold Systems**
EndoSan delivers reliable results in a wide temperature range, ensuring the effective disinfection and biocidal protection in both hot and cold water systems.
- ▶ **Unrivalled Stability**
EndoSan is not only stable in water giving lengthy residual protection against micro-organisms but it also has a 3 year shelf life.



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Advanced Water Technology at Work

Unveiling the Power of EndoSan Guardian Dosing Systems

What Is an EndoSan Guardian Dosing System?

The EndoSan Guardian Dosing System represents cutting-edge technology specifically engineered for targeted EndoSan applications. It seamlessly optimises dosing operations by synchronising with external indicators like water meters or PPM levels (smart meters). Through precise infusion of EndoSan into water, this system plays an indispensable role in ensuring the reliable and efficient administration of EndoSan, consistently delivering optimal results.

Why Use Our Dosing System?

- ✓ Constant Biocidal Protection
- ✓ Automation of Water Treatment
- ✓ Precision Dosing According to Water Usage
- ✓ Ease of Maintenance and ppm Testing
- ✓ Scalability
- ✓ Reduced Human Error and Risk



EndoSan Dosing Systems Are Versatile and Used in a Wide Range of Industries



Commercial Buildings
Hot and Cold Domestic Water Systems



Food & Beverage
Food/Bottle Washing & Production Line Treatment



Agriculture
Animal Drinking Supply



Process Systems
Dust Suppression, Fountains, Rainwater Harvesting



Horticulture
Produce Washing & Irrigation Systems



Marine, Shipping & Offshore
Ballast Tanks, Hot & Cold Domestic Water Systems

Constant Dosing Case Studies

Example EndoSan Dosing Systems Actively Protecting Water Systems



RESEARCH FACILITY SOUTHERN UK

Challenge: A Southern England research facility faced Legionella contamination concerns within its water system.

Solution: The facility implemented EndoSan dosing systems (dosing at 20ppm) swiftly eradicating the Legionella threat.

Results: Post-treatment, water samples showed no traces of Legionella, securing ongoing safety.

Benefits: Rapid Legionella elimination, sustained high water quality, and resilience during the COVID-19 pandemic.



7-STOREY OFFICE BUILDING LONDON, UK

Challenge: Legionella contamination detected in a 7-story London office building with a maximum occupancy of 1,000 persons, but reduced water usage.

Solution: Implemented EndoSan continuous dosing at 20ppm for hot and cold-water systems.

Results: Swift reduction in microbiological counts to safe levels (<1000 cfu/l) immediately following EndoSan dosing, even during reduced occupancy.

Benefits: Maintained consistent water quality at or below 100 cfu/l for 12 months, ensuring safety despite reduced water usage.



MULTI-USE 8-STOREY BUILDING LONDON, UK

Challenge: Despite intermittent high levels of *Legionella spp.* over many years, a multi-use building with 18 commercial units and 114 residential flats (70% occupied) sought a solution.

Solution: The introduction of EndoSan continuous dosing disinfection for hot and cold-water systems at 20ppm.

Results: Immediate reduction in microbiological counts to safe levels (<1000 cfu/l) post-EndoSan dosing.

Benefits: Consistently maintained water quality at or below 100 cfu/l for three months, effectively addressing long-standing *Legionella spp.* issues.



RAINWATER HARVESTING LARGE INDUSTRIAL SITE, UK

Challenge: Rainwater harvesting system on UK coastal site susceptible to sea bird, algae, and Legionella contamination in rainwater.

Solution: Implemented the EndoSan Guardian Smart Doser Plus automated dosing system.

Results: Regular tests revealed the absence of Legionella or algae. Ongoing monitoring confirmed sustained success.

Benefits: The system enables ecological benefits by lowering mains water use. It curbs building upkeep costs ensuring continuous effectiveness. Efficiency is boosted with remote monitoring, decreasing visits and improving audit trails.

Configure Your EndoSan Dosing Solution in 4 Steps:



1. SYSTEM & FOOTPRINT

Select the dosing system, footprint and housing best suited to your application.

2. ADD-ONS

Select any additional functionality you may require.

3. FINANCE & COVER

Choose the payment method that suits you and any extended warranty or servicing.

4. PRE-INSTALL INFO

Review the pre-install info to determine if any modifications are required at your site.



EndoSan[®]

Guardian Dosing System Range

All dosing systems come stress tested, banded to contain any potential chemical spillage and include a 12 month back to base warranty.



**STEP 1:
SYSTEM &
FOOTPRINT**

Banded 20L Stand

- ▶ Ideal for water consumption circa 590m³ per month.
- ▶ Proportionately doses in accordance with water flow rate via direct injection.
- ▶ Features market-leading solenoid diaphragm dosing pump.
- ▶ Only one moving part, meaning the drive is virtually wear-free.
- ▶ The pump requires no lubricated bearings so maintenance and repair is minimal.
- ▶ Portable option with large tyres for ease of transport also available.

Height: 1,400 mm Width: 480 mm Depth: 395 mm
Weight: 14Kg Material: Polyethylene (PE)



20L Banded Enclosed

- ▶ Ideal for water consumption circa 590m³ per month.
- ▶ Features the same market-leading solenoid driven dosing pump.
- ▶ Proportionately doses in accordance with water flow rate via direct injection.
- ▶ Entry level solution to restrict access to and store dosing equipment and a 20L drum of chemical.
- ▶ Pump equipment and drum low LED alerts visible through window.
- ▶ Secured by combination lock.

Height: 1,270 mm Width: 400 mm Depth: 550 mm
Weight: 19Kg Material: Foamex

20L Bundled Secure Enclosed

- ▶ Ideal for water consumption circa 590m³ per month.
- ▶ Robust Polyethylene (PE) construction.
- ▶ Secure solution to restrict access to and store dosing equipment and a 20L drum of chemical.
- ▶ Pump equipment and drum low LED alerts visible through large window.
- ▶ Secured by key locking mechanism.
- ▶ Also available with large, external flashing light on drum low alert.

Height: 1,200 mm Width: 538 mm Depth: 530 mm
 Weight: 30Kg Material: Polyethylene (PE)



80-140L Bundled Secure Enclosed

- ▶ Ideal for water consumption circa 2,360-4,130m³ per month.
- ▶ Robust Polyethylene (PE) construction.
- ▶ Secure solution to restrict access to dosing equipment and chemical.
- ▶ Available with large internal reserve tank (pictured) or space for 4 x 20L drums (1 active in use and 3 stored drums).
- ▶ Pump equipment and drum low LED alerts visible through large window.
- ▶ Secured by key locking mechanism.
- ▶ Also available with large, external flashing light on drum low alert.



80L	Height: 1,560 mm	Width: 875 mm	Depth: 620 mm
	Weight: 40Kg	Material: Polyethylene (PE)	
140L	Height: 1,560 mm	Width: 875 mm	Depth: 620 mm
	Weight: 49Kg	Material: Foamex	



EndoSan is compliant with the UK & EU BPR Process. During this time it is legal for sale and use for disinfection of drinking water systems intended for humans and animals.





STEP 2:
ADD-ONS

Uninterrupted Dosing Remote Drum Level Monitoring

With Dosercom, you'll never have to worry about running out of disinfectant again. Our innovative, internet-enabled technology keeps you informed in real-time.

Dosercom sends instant alerts via email and SMS when your chemical reserves are running low or have been replenished.

Say goodbye to the guesswork and manual checks when it comes to maintaining your EndoSan Guardian dosing system. With Dosercom, you can now manage water disinfection in a smarter way.



Dosercom Benefits: Real-time Remote Monitoring



Operational Efficiencies
Eliminates manual checks, enabling smarter planning and reducing repeat visits.



Increased Productivity
Automates monitoring of chemical levels, freeing up personnel for other tasks.



Risk Reduction
Minimises risks by reducing human intervention in hazardous chemical level checks.



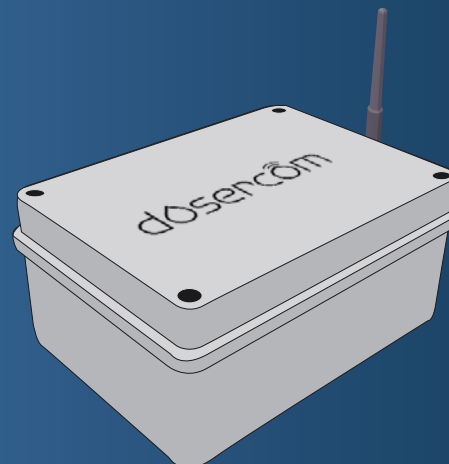
User Satisfaction
Reliable and timely supply of chemicals enhances user satisfaction and confidence.



Smarter Inventory Control
Optimises inventory levels for improved resource allocation.



Enhanced Compliance
Ensures continuous awareness of chemical levels, preventing system downtime due to shortages.





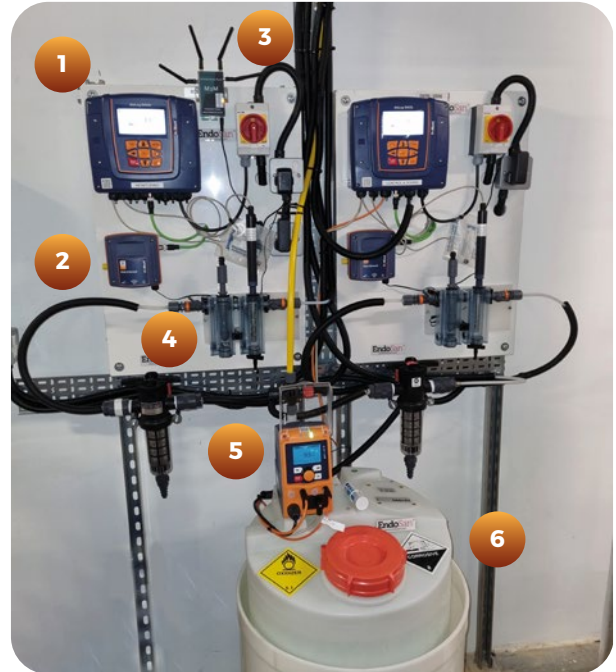
**STEP 2:
ADD-ONS**

Next Level Dosing with Smart+

This cutting-edge, fully automated 'smart monitoring' and dosing system is the ultimate solution for safeguarding your water system or industrial process with EndoSan.

Comprising of:

- 1 **Smart DACb Controller:** H2O2 smart sensing and adjustment technology
- 2 **Dulconnex:** Secure remote monitoring via smart-phone/tablet or PC.
- 3 **IoT Gateway:** Providing the data connection to allow remote capabilities.
- 4 **H₂O₂ Probes:** Reliable, precise & real-time amperometric measurement of hydrogen peroxide.
- 5 **Gamma X Pump:** Upgraded metering pump with digital delay, clear ppm dose rate and reserve chemical volume percentage.
- 6 **Bunded Reserve Tank:** Large capacity tank to provide increased levels of chemical reserves. Fully bunded to negate risks involved with chemical leaks and spills.



Upgrade to Unprecedented Control



Fully Automated Dosing
Smart Dosing System allows precise adjustment via H2O2 probes, sampling and automatically adjusting chemical metering.



H2O2 Sensors
Equipped with high-quality peroxide sensors, accurately measuring hydrogen peroxide concentration (up to 500ppm).



Probe Housing with Flow Detection
Isolated probe housing with flow detection ensures reliable dosing precision.



User-Friendly Display
Large, colour-changing display with an intuitive interface for easy real-time monitoring and control.



Perfect for Recirculating Water Systems
Ideal for recycled water systems, ensuring efficient treatment and optimal water quality maintenance.



Power Isolation & Interfaces
Backboard-mounted with power isolation for safety and optional LAN or BMS interfaces for seamless integration.



Mobile Device Access
Monitor dosing system from anywhere with optional mobile device visibility (tablets or smart phones).



Simple Warranty Solutions with No Hidden Costs



STEP 3: FINANCE & COVER

A 3-Part Annual Care Schedule:

- ▶ Pre-Visit Health Check with assessment.
- ▶ Fully documented service of your dosing system aligned to the warranty schedule.
- ▶ Post-Service Health Check to ensure everything is working to a high standard.

- ✔ Worry Free, Fixed Price, Extended Warranty and Servicing
- ✔ Parts and Labour included within price
- ✔ Fully trained Service Engineers
- ✔ Safeguard critical equipment
- ✔ Simplifying water quality control and protection.

	Care Service 1 Year*	Care Plus 3 Year*	Care Premium Plus 6 Year*
What's included	Pay As You Go 2 Health Checks and 1 Service	Half Life Agreement 6 Health Checks and 3 Services	Full Asset Lifetime Agreement 12 Health Checks and 6 Services
Fully Trained Service Engineer	✔	✔	✔
Annual Pre-Service Health Check	✔	✔	✔
Annual Service	✔	✔	✔
Annual Post Service Health Check	✔	✔	✔
Mechanical Warranty on Service Parts	✔	✔	✔
Documented Checks and Service Reports	✔	✔	✔
Health & Safety Documentation	✔	✔	✔
Service Schedule Parts included	✔	✔	✔
Labour	✔	✔	✔
Full Asset Warranty Over Agreement		✔	✔
No Inflation Over Agreement on Labour/Parts		✔	✔
Price Guarantee - Buy Doser Again at Original Price			✔



Price Guarantee
No increase in costs for 3 years on parts and labour



Price Guarantee
No increase in costs for 6 years on parts and labour

Option in year 6 to replace your asset at the original price

Now Offering Flexible Leasing Options For Your Dosing Equipment



**STEP 3:
FINANCE &
COVER**



**Alleviate cash flow by spreading the cost.
Affordable business finance options available.**

Now offering flexible leasing options for your dosing equipment!

Endo Enterprises (UK) Ltd, in association with Shire Leasing PLC, are offering leasing options for your automated dosing equipment needs. Leasing is a flexible payment option that comes with many benefits:



No Major Upfront Costs

Don't let a purchasing budget hold you back. Leasing removes the need for significant outlay, allowing you to put your cash to better use.



Pay as You Earn

Get use of the equipment immediately, without having to find the full sum up front. Only the first rental is normally required to begin the agreement and it is usually taken by Direct Debit.



Fixed Payments

Lease rental payments are fixed, which makes budgeting and forecasting easier.



Protect Existing Lines of Credit

Leasing protects your existing lines of credit such as bank loans and overdrafts.



Easy Upgrades

Business equipment is always evolving. At the end of the agreed term, you can upgrade to state of the art equipment.

Who Is Shire Leasing?

Shire Leasing PLC provide competitive rates and great support when offering business finance options, making them the preferential and recommended business lease provider of Endo Enterprises (UK) Ltd.



Shire Leasing is one of the largest independent funding houses in the UK, specialising in leasing specifically for business critical equipment in the B2B market place.

An innovative and agile company working with manufacturers, resellers and distributors since 1990.


Funder with an own book portfolio of circa £175m to support UK SMEs, as well as relationships with a strong panel of investors which allow for deals to be brokered if necessary.

Credit decisions in as little as 4 hours, so you can continue with your growth plans with minimal delays.

1.
Choose your equipment and apply for finance



2.
Receive a finance decision in as little as 4 hours




3.
If accepted*, documentation to be signed and returned



4.
Agreement begins after delivery/ installation



*Finance for business use customers only. Subject to credit status, approval, terms and conditions. 

*Finance for limited company business use purposes only.

Any lease entered into will be with Shire Leasing PLC or may be introduced to one of a group of asset finance lenders and subject to application, credit and their terms and conditions.

Shire Leasing PLC is Authorised and Regulated by the Financial Conduct Authority for certain types of consumer credit lending and credit related activities that are regulated under the Consumer Credit Act 1974 and by the Financial Services and Markets Act 2000.

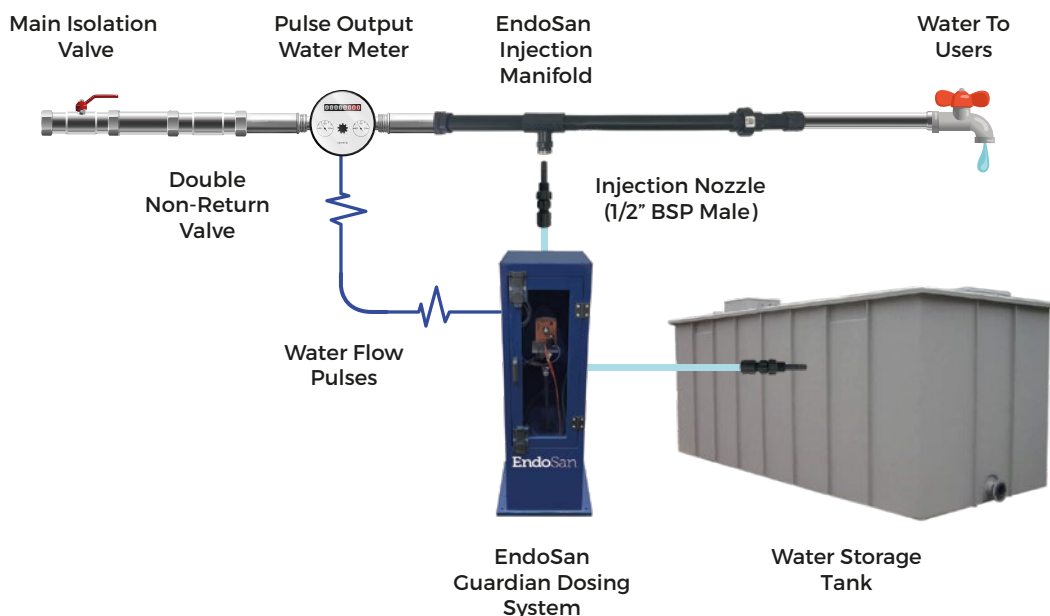
EndoSan Dosing System

Pre-Install Information



STEP 4: PRE-INSTALL INFO

- Commissioning and Training:** Unless otherwise specified, commissioning and training are available at an extra cost. The purchaser is responsible for arranging and conducting any necessary commissioning and training by qualified personnel before use.
- Electrical Supply and Injection Point:** A 240V electrical supply and an injection point within 5 meters of the dosing system location is required for all installations.
- Pulse Flow Meter:** A pulse flow meter of appropriate size must be horizontally installed as part of the equipment provided in this quotation. This ensures precise measurement and monitoring of the flow rate. The orientation of the water meter is acceptable in a vertical position as long as the flow is upward. During commissioning, the water meter internals must be completely flooded, with no air present.
- Risk Assessments:** The purchaser is responsible for carrying out and documenting all necessary risk assessments for the use and installation of the dosing equipment supplied. This is to ensure that the equipment is used safely and appropriately.
- Installation and Operating Manuals:** The purchaser must follow the installation and operating manuals provided when installing and using the equipment. Failure to do so may result in damage to the equipment, and the purchaser will be responsible for any resulting costs.
- Double Non-Return Valves (NRVs):** NRV's are required upstream of the injection point when dosing directly into mains-fed pipework. These valves are not included in the equipment supplied in this quotation and must be purchased separately.
- Injection Point:** EndoSan must be injected into plastic (PVC/PE/PP) or stainless steel (SS304/316) pipework, with a minimum distance of 200mm upstream and 500mm downstream from the injection point in these materials. Any other materials must be approved by the supplier.
- Pipework:** A minimum of 3 meters of accessible pipework must be available to support pipework injection.



EndoSan®



AUTOMATED CONSTANT DOSING SYSTEMS

ASSOCIATED PRODUCTS



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STABILISED HYDROGEN PEROXIDE

	PRODUCT CODE	H ₂ O ₂ CONCENTRATION	VOLUME (LTRS)	WEIGHT (KG)	FULL PALLET QTY
ENDOSAN 50 IBC	23-50-IBC	50%	1,000	1,200	1
ENDOSAN 50 20 LTRS	23-50-020	50%	20	24	28
ENDOSAN 50 10 LTRS	23-50-010	50%	10	12	60

TEST STRIP INDICATORS

Checking the residual concentration of EndoSan in water is made very simple by test strip indicators. There are three types of EndoSan test strip available :

- ▶ **LOW RANGE** - Test peroxide levels up to 100ppm.
- ▶ **HIGH RANGE** - Test peroxide levels up to 1000ppm
- ▶ **EXTRA HIGH RANGE** - Test peroxide levels up to 5000ppm



DIP



SHAKE



WAIT



COMPARE



ENDO ENTERPRISES™
ADVANCED WATER TREATMENT SOLUTIONS

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