

High Performance Energy Saving Dust Collectors

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THE ENVIROJET W-SERIES

The Envirojet W-Series from Dust Control Environmental (DCE) Ltd, is a cutting edge range of high-performance, reverse jet, bag dust collectors. Engineered with precision they are specifically designed to efficiently manage fine and fibrous dust and shavings making them ideally suited to joinery, timber and recycling processing facilities.

The Envirojet W-Series incorporates a cascading fan and intelligent E-Performance system which dynamically adjust energy usage to align with plant processes offering a potential reduction in energy consumption of up to 50%.

ENVIROJET DESIGN STANDARDS

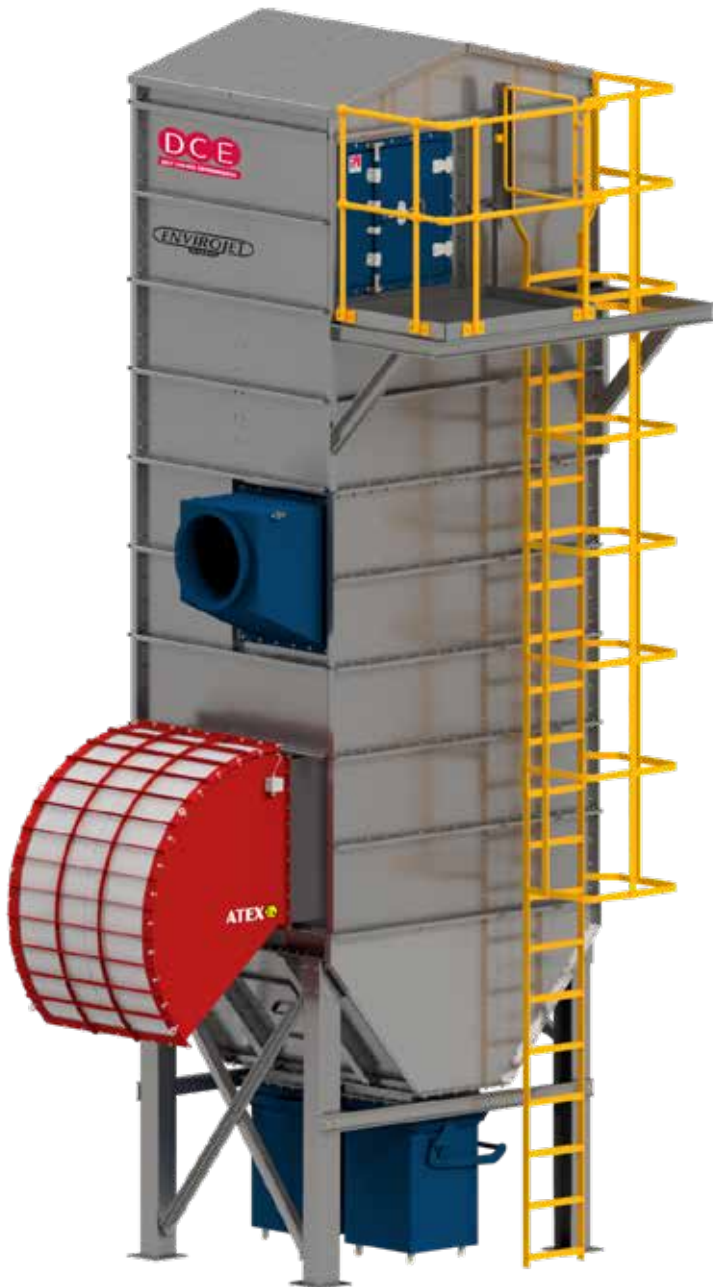
- ISO9001: 2015 – Quality Management System
- PD5304:2014 Safety of Machinery (205) – code of practice
- 2014/68EU Directive – Pressure Vessels Regulations
- 2014/30/EU Electromagnetic Compatibility European Standard
- ATEX 2014/34/EU Safe Handling of Explosive Atmospheres



KEY FEATURES

BENEFITS

Negative pressure extraction	High-performance extraction. No pressure build up within unit.
Cascading fans with E-Performance monitoring	Up to 50% reduction in energy consumption.
Insulated Penthouse clean air fan housing	Low operational noise levels. Maintain ambient heat for recirculation. Can assist in heating cost reduction.
Factory sealed unit delivered part or fully assembled	Quick installation. Performance assured.
Space efficient modular design	Compact footprint. Capability to extend the system.
Oval filter bags	26% more surface area within the footprint of a typical tubular bag dust collector.
Waste pre-separation chamber	Filter media protected from excessive wear. Reduces frequency of bag changes.
Reverse jet filter cleaning system	Requires no recovery time. Allows for genuine 24/7 operation.
Waste Transport options	Easier waste disposal. Environmentally friendly waste reuse options.
DCE Remote Link Feature	Live performance data. Quick diagnostics. Maintenance planning.
ATEX options	Certified safe operation of equipment in potentially explosive atmospheres.
Galvanised finish to body	Durable. Protected from environmental conditions. Can be colour powder coated.



ATEX EXPLOSIVE DUST

ATEX generally refers to the hazard of explosive atmospheres occurring in the workplace due to the presence of flammable gasses or combustible dust mixed in air, which can give rise to the risk of explosion. Equipment functioning in such an environment has a legal requirement to be manufactured to ATEX standards to ensure safe operation and the safety of the workforce.

The Envirojet W-Series of dust collectors have been designed to handle a wide range of explosive dust types. The body construction and explosion relief venting are all designed and calculated to comply with the latest ATEX directive ATEX 2014/34/EU.

SPARK DETECTION AND SUPPRESSION SYSTEM

A spark detection & suppression system crucially detects sparks or embers travelling along ducting before they reach the dust collector or other critical areas, reducing the risk of a dust explosion or fire.

Sensors, placed within the ducting, are highly sensitive to identifying the infrared light emitted by sparks. Once detected, a suppression system, usually in the form of a water jet is activated almost instantaneously to extinguish the hazard preventing further risk.

Commonly used in woodworking, metalworking and other industries where combustible dust is present – DCE can incorporate a spark detection and suppression system into a Envirojet W-Series dust extraction scheme.

THE ENVIROJET W-SERIES ATEX DESIGN FEATURES

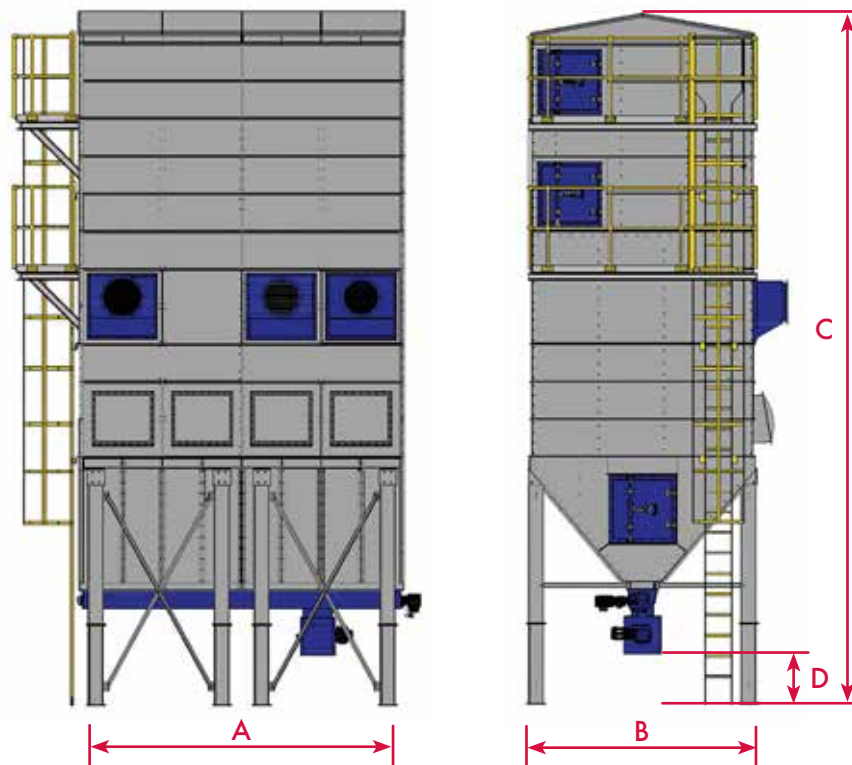
- Can handle ST1 dust
- Pred strength 0.27 Bar
- Side mounted explosion venting with upturn deflectors available
- Flameless vent options available
- Range of pressure shock resistant pipe work
- Spark detection & suppression system available

Flame Propagation Valve

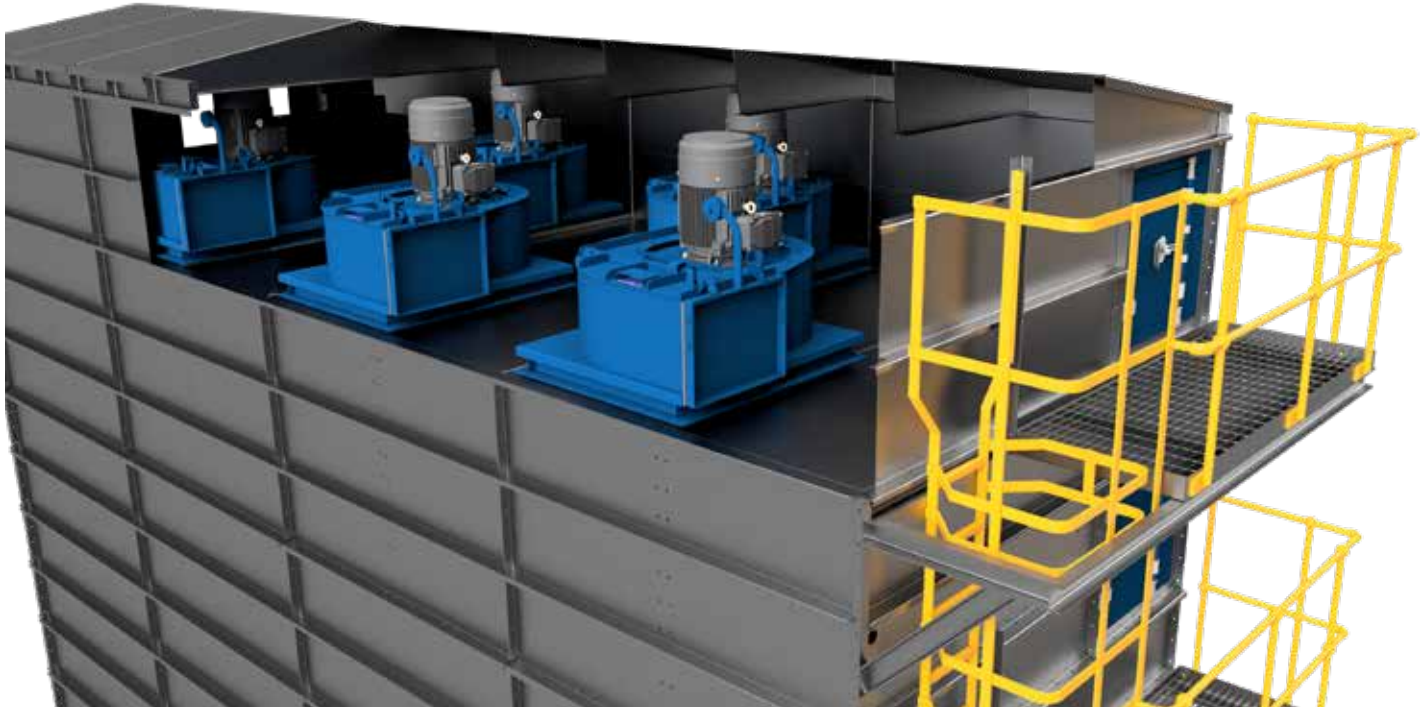


ENVIROJET W Model	Filter Area m ²	Filter Area Ft ²	Max m ³ /Hr	Number of Valves	Dimensions (mm)				Weight kg
					A	B	C	D	
Standard Bag Cell Spacing									
Envirojet W- 167.112.190	190	2,044	26,066	16	2,162	3,235	9,725	680	7,500
Envirojet W- 247.168.286	286	3,077	39,236	24	3,243	3,235	9,725	680	11,250
Envirojet W- 327.224.380	380	4,089	52,132	32	4,325	3,235	9,725	680	15,000
Envirojet W- 407.280.476	476	5,122	65,302	40	5,406	3,235	9,725	680	18,750
Envirojet W- 487.336.571	571	6,144	78,335	48	6,486	3,235	9,725	680	22,500
Envirojet W- 567.392.666	666	7,166	91,369	56	7,567	3,235	9,725	680	26,250
Envirojet W- 647.448.762	762	8,199	104,539	64	8,650	3,235	9,725	680	30,000
Envirojet W- 727.504.856	856	9,211	117,435	72	9,731	3,235	9,725	680	33,750
Envirojet W- 807.560.952	952	10,244	130,605	80	10,812	3,235	9,725	680	37,500
Envirojet W- 887.616.1047	1,047	11,266	143,638	88	11,893	3,235	9,725	680	41,250
Envirojet W- 967.672.1142	1,142	12,288	156,671	96	12,975	3,235	9,725	680	45,000
Increased Bag Cell Spacing									
Envirojet W- 127.84.142	142	1,528	19,481	12	2,162	3,235	9,725	680	5,800
Envirojet W- 187.126.214	214	2,303	29,359	18	3,243	3,235	9,725	680	8,700
Envirojet W- 247.168.286	286	3,077	39,236	24	4,325	3,235	9,725	680	11,600
Envirojet W- 307.210.357	357	3,841	48,977	30	5,406	3,235	9,725	680	14,500
Envirojet W- 367.252.428	428	4,605	58,717	36	6,486	3,235	9,725	680	17,400
Envirojet W- 427.294.500	500	5,380	68,595	42	7,567	3,235	9,725	680	20,300
Envirojet W- 487.336.571	571	6,144	78,335	48	8,650	3,235	9,725	680	23,200
Envirojet W- 547.378.642	642	6,908	88,076	54	9,731	3,235	9,725	680	26,100
Envirojet W- 607.420.714	714	7,683	97,954	60	10,812	3,235	9,725	680	29,000
Envirojet W- 667.462.785	785	8,447	107,694	66	11,893	3,235	9,725	680	31,900
Envirojet W- 727.504.856	856	9,211	117,435	72	12,975	3,235	9,725	680	34,800

ENVIROJET W-SERIES MAIN BODY



THE ENERGY SAVING CASCADING FAN AND E-PERFORMANCE SYSTEM



At the core of the DCE Envirojet W-Series is an innovative cascading fan scheme with E-Performance intelligent monitoring. Working together they tailor the running capacity of the dust extractor in accordance to a site's real-time operational needs. This flexibility can typically achieve up to a 50% reduction in power consumption dependent on demands.

Controlling the running time and speed of fans can extend the lifecycle of some components decreasing maintenance and replacement activity.

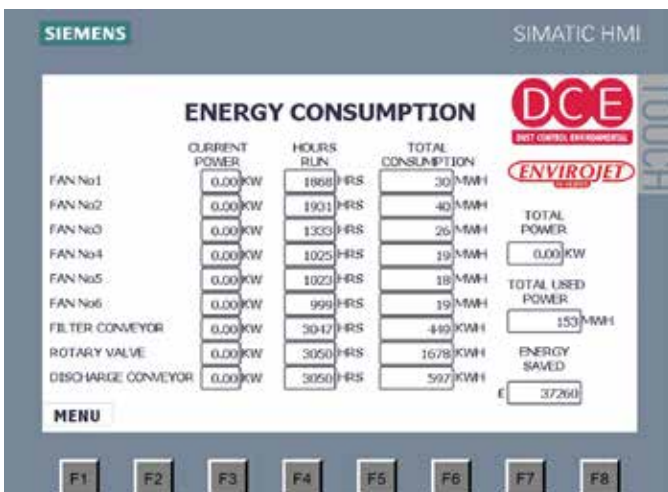
HOW IT WORKS

Pneumatic control dampers are strategically placed at key operational points. These points via the E-Performance intelligence are monitored for energy use, allowing for adjustments to fan configurations and speeds.

For instance, when certain processing points are inactive, the system signals the pneumatic control dampers to close, which in turn slows down or stops the fans. This then reduces the overall air volume resulting in energy savings with no loss of suction pressure to the remaining operational lines.

This energy-efficient process does not compromise the performance of the dust collection unit. It ensures dust is conveyed through the ducting at speeds between 25 and 28 m/s, well above the HSE guideline of 18 m/s, preventing the accumulation of waste particulates that could cause damage.

Utilising this system ensures that the Envirojet W-Series provides highly efficient dust collection along side cutting energy use and costs, lowering operational environmental impact.



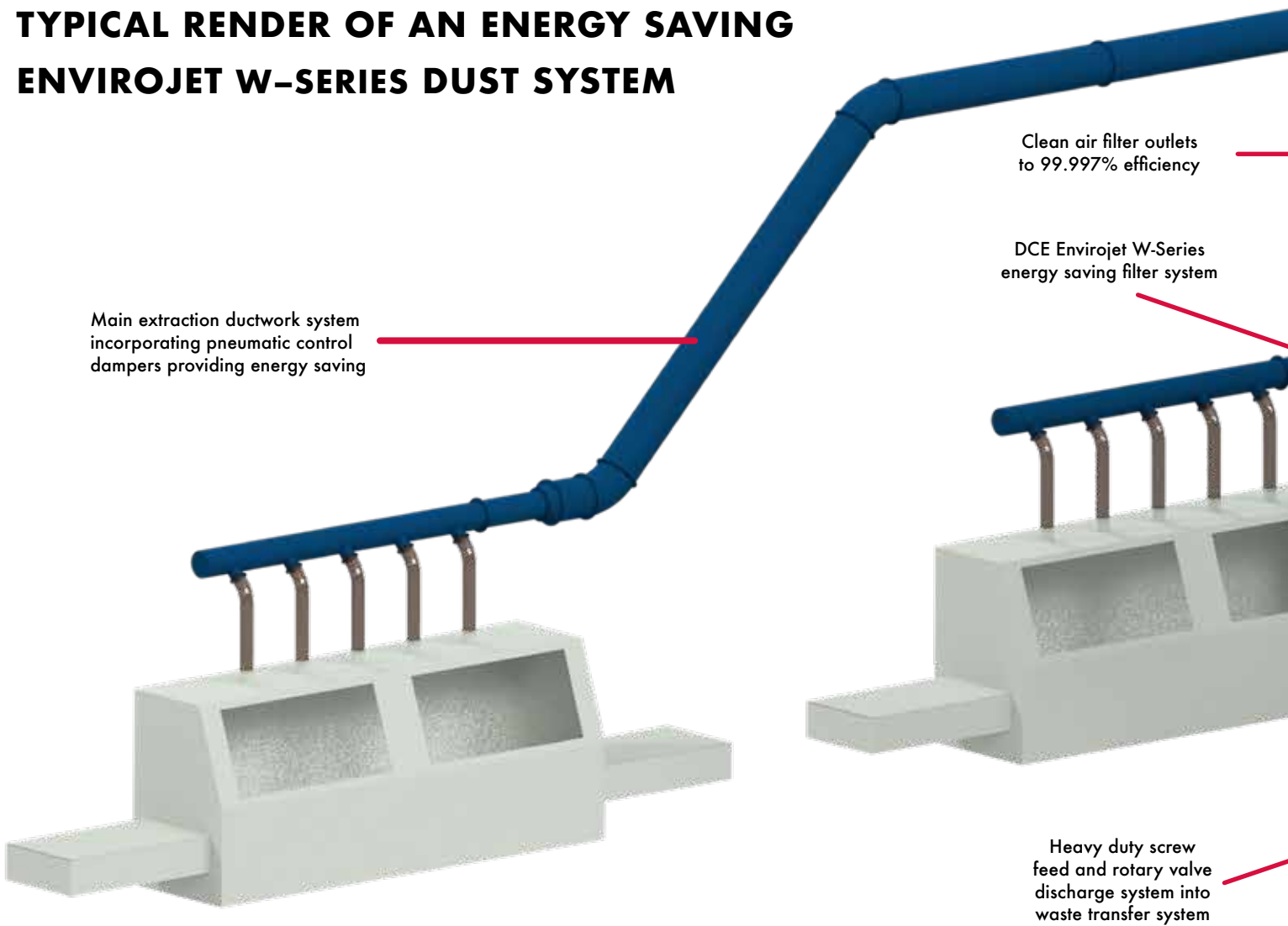


DUST CONTROL ENVIRONMENTAL



Up to 50% Energy Reduction WITHOUT Loss of System Suction Pressure!

TYPICAL RENDER OF AN ENERGY SAVING ENVIROJET W-SERIES DUST SYSTEM



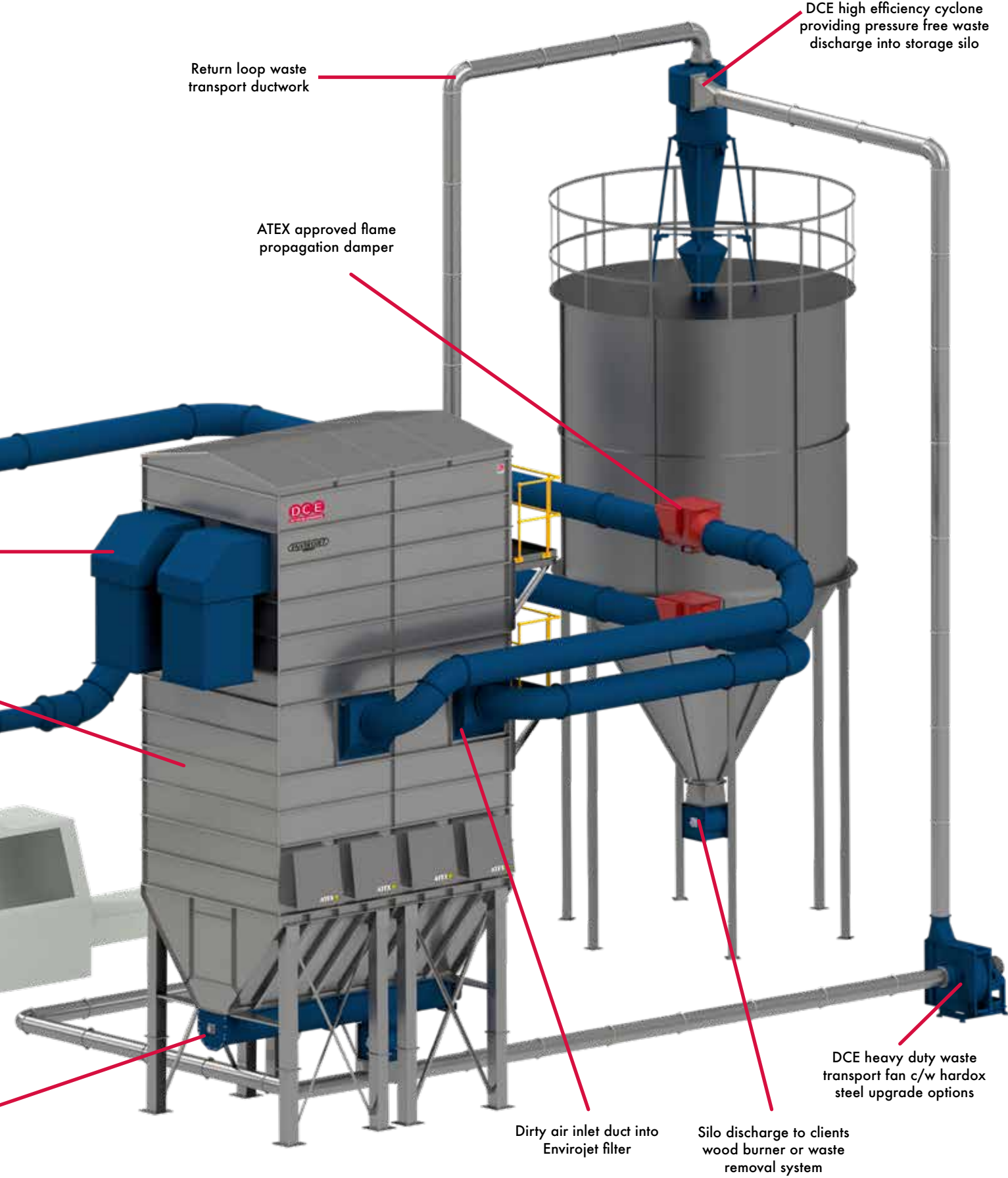
Main extraction ductwork system incorporating pneumatic control dampers providing energy saving

Clean air filter outlets to 99.997% efficiency

DCE Envirojet W-Series energy saving filter system

Heavy duty screw feed and rotary valve discharge system into waste transfer system

Energy Saving Duct System



PAINTING & FINISHING PRODUCTS

Maintaining a clean and controlled environment is crucial for achieving flawless painting and finishes. When it comes to providing extraction systems for the painting and finishing process, Dust Control Environmental offers a comprehensive range of products. These cater to various stages, from timber processing and joinery production to the final painting and finishing aspects. As a one-stop shop, they ensure efficient extraction throughout the entire manufacturing process.

STANDARD WET AND DRY FILTER BOOTHS

Standard wet or dry filter booths are built and priced with a working height of 2250mm, a 1000mm canopy, bell driven axial fan, DOL starter and Andraea Starter Filter.

DCE can offer all our booths with bespoke 6500K, 10000, 12000 or 14400 lumen LED lighting for an additional cost – complete with glass and glazing frame to suit.

For Filter Booths a range of premium filters are available on request, as are bespoke height, width and depth/canopy additions.

Ducting to suit all applications can also be supplied, fitting directly to the fan output. The design and costing for ducting can be provided at the time of order and delivered directly to site if required. Fan options such as ATEX, can be quoted upon request.

All spray booths are available with our “eco” option, delivering the exact same functionality, but utilising an IE4 Super Premium Efficiency motor and digitally configurable inverter drive, reducing power consumption to 1/8th of a standard booth.

Combine this with a renewal energy power supply and the “eco” booth can be operated carbon neutral, whilst also reducing overall running costs.

Silencers are available for quoting upon request for managing noise levels.



3m Dry Back Spray Booth



Water Wash Spray Booth

OVENS

The DCE finishing box oven come with a standard internal working height of 2000mm, double doors that can be full height or slotted for overhead track use, honeycomb pane construction and thermal breaks in each panel to minimise exterior heat transfer. The roof section contains explosion relief panels to ensure safety in the event of an explosive atmosphere.

Ovens are constructed with 100mm insulated walls complete with a grey textured outer skin and aluminised steel inner panels. The oven comes complete with painted floor channels and door surrounds. A number of different colours can be provided to suit all individual needs. The standard colour for frames and channels is orange. Ovens come with no floor as standard, but insulated floors, stainless steel inner panels and conveyor systems are all available upon request.

Included in the cost is the oven control panel, burner, fan, bleed fan and internal composite beam technology. Our standard oven range will maintain temperatures between 100-275° degrees C depending on application. Our standard and most common ovens are gas-fired; however, electric options and bespoke sizing is available upon request.



Box Oven

**Combination Line
with Oven**



WASTE DISPOSAL INTEGRATION – A ROUTE TO REDUCING CARBON FOOTPRINT

Dust Control Environmental can offer different options of waste transport systems to help companies utilise sustainable and more environmentally friendly methods of collected waste disposal. It is known that better segregation of waste, along with composting and recycling can significantly cut emissions.

BULK BAG WASTE FILLING

Implementing bulk bag waste filling systems can enhance safety and efficiency. These systems allow waste collection without manual handling, reducing the risk to workers and ensuring proper waste management.

STORAGE SILO COLLECTION

Feeding waste from dust collectors into storage silos provides an opportunity for resource recovery. Trickle-feeding waste into a biomass burner can generate heat for factory facilities, reducing both disposal costs and heating expenses. The reuse of this "waste" material can contribute to a net-zero carbon footprint by avoiding disposal at a landfill site.

SHREDDING

The provision of a shredder particularly for wood waste helps manage its volume and facilitates further utilisation such as the conversion of the shredded material into briquettes for heat production or for easy handling. Properly managed waste plays a vital role in minimising waste and the environmental impact it has.

BRIQUETTING SYSTEMS

These systems use hydraulic pressure to create dense bricks out of wood, metal or other biomass waste for re-purposing as fuel or re-use in a manufacturing processes. It also provides a cleaner more efficient fuel by extracting fluids and sludge.

BIOMASS BURNERS

Fuelled by wood waste such as chippings, shavings and sawdust, a biomass burner provides low carbon, renewable heat back into the manufacturing facilities, eliminating waste disposal costs.

Loop Waste Transport



Storage Silo Collection



Shredder



Briquetting System



Biomass Burner



Shredder, silo and briquetter Images: Copyright NESTRO® Lufttechnik, Germany.

PERFORMANCE MONITORING

Dust Control Environmental prioritise the continual high performance and efficiency of each of their dust extractors, including the Envirojet W-Series. The provision of state-of-the-art control panels and remote monitoring systems allows simple, yet reliant, operation with immediate identification of problematic issues for quick remediation and minimal plant downtime.

DCE CONTROL PANELS

The control panel in a dust extraction system is essential for managing, optimizing and tailoring performance. Its components work together to ensure the system operates efficiently, safely, and effectively.

KEY COMPONENTS

Cleaning Controls: Manages filter cleaning cycles.

Pressure Drop Monitoring: Measures the pressure differential between clean and dirty air chamber to trigger cleaning cycles which automatically maintains extraction levels whilst fully operational.

Motor Starter: Controls extraction fan motors.

Safety Features: Includes fuses and disconnects for protection against electrical faults.

PLC Sequence: Tailors the filter plant sequence to suit unique waste disposal requirements of each site.

User Interface: Digital displays and touch screens for easy operator use.



DCE REMOTE LINK

Connected devices and sensors enable the DCE Remote Link to track the performance of the Envirojet W-Series in real time.

KEY BENEFITS

Live Performance Data and Alerts: Immediately informs operators if certain thresholds are breached.

Quick Diagnostics: Enables timely maintenance, minimizing issues and downtime.

Maintenance Planning: Helps efficiently arrange maintenance activities.

Cost Efficiency: Proactive monitoring quickly signals malfunctions, helping avoid costly repairs.

Peace of Mind: Assurance that systems are working to their optimum.



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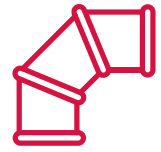
SURVEYS



**DESIGN &
MANUFACTURE**



**BESPOKE
DESIGN**



DUCTING



INSTALLATION



**SPARES &
PARTS**



**LEV TESTING &
COMMISSIONING**



**MAINTENANCE
& SERVICING
PACKAGES**



Certificate Number 11873-QMS-001
ISO 9001



Environment
Agency

ENVIROJET • ENVIROJET W SERIES • TYPHOON • TORNADO • STORM • VORTEX • COMPACT • WELDING EXTRACTION • PAINTING & FINISHING

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