



**A Tradition
of Rail Excellence**

Product Catalogue



**20 YEARS OF
RAIL EXPERTISE**



**AN UNRIVALLED
SAFETY RECORD**



**100% FOCUSED ON
THE RAIL INDUSTRY**

www.emeg.co.uk



Contents

2	About Us
4	Our Group
6	Our Offices
8	Maintenance Services
10	Design Services
12	depotCONNECT®: Smart Rail Integration System
14	safeNet™: Intelligent Depot Protection System
18	e-vac™: Controlled Emission Toilet Extraction and Flushing System
22	e-fume™: Intelligent Exhaust Fume Extraction Arm System
24	e-wash™: Carriage Wash Machine System
26	Crous Chemicals Overview
28	e-mix™: Intelligent Fluid Mixing
30	e-fuel™: Fuel Services
32	e-pure™: Air Purifiers and Ventilation Units
40	e-shore™: Shore Supplies
41	e-jet: Depot Heating & Cooling Solutions
42	Ancillary Range
56	Crous Chemicals
68	Crous LED/Lighting
72	Case Study: Kirkdale Depot
73	Case Study: Wigan Springs Branch Depot
74	Case Study: Plymouth Laira TMD
75	Case Study: Howdon Satellite Depot
76	Case Study: Cardiff Canton ROC

About Us

At Emeg, we provide a range of specialist services focused on the needs of owners and operators of rail facilities and sidings. We aim to develop long-term relationships with our clients, to understand your business so we can tailor our services to your unique requirements.

Our History

Emeg was founded in 1997 by Richard Simmonite, a time-served electrical engineer with over 40 years' experience within the rail sector. Today, Emeg is a completely rail-focused company, offering turnkey, in-house solutions to all projects – from new-build to enhancement and refurbishment works.

Throughout our long history, our work has mainly centred upon maintenance depots, station upgrades, re-signalling and permanent way (PWay) project works.



Our Services



Design Services



MEP



Depot Systems



Depots



Stations



Maintenance

Our Accreditations

We are focused on delivering the highest level of service and efficiency and are dedicated to maintaining a list of accreditations that prove our commitment to quality.



Our Clients

Our focus on client-oriented and tailor-made solutions has enabled us to work with a large list of clients on a long-term basis. Our clients include:



Our Ethos

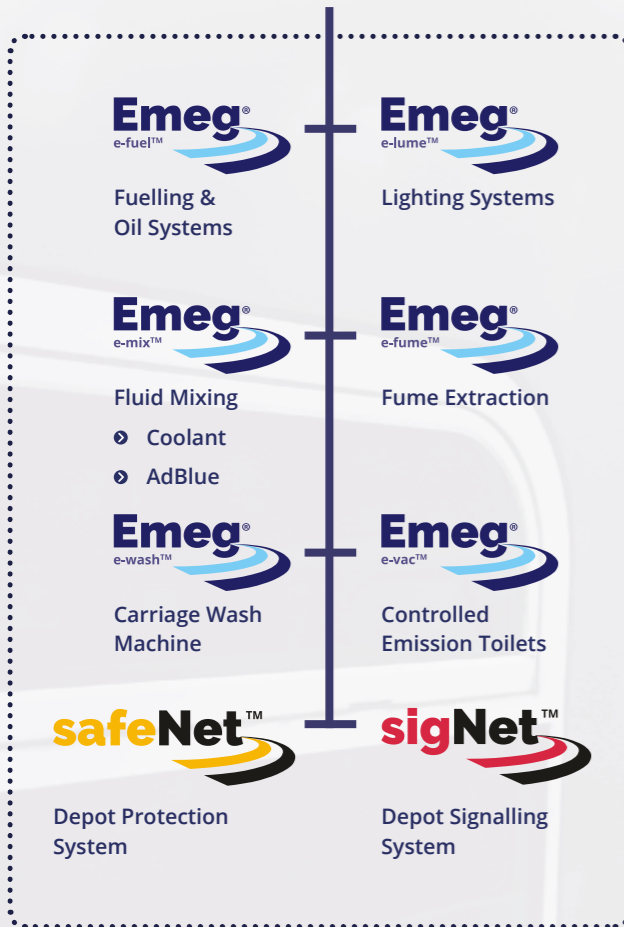
We employ a consistent site workforce of full-time engineers, electricians, pipe fitters, gas installers, heating & ventilation engineers. All ably controlled by our project management teams, backed up with off-site services of SQE, estimating, procurement and design.

At Emeg, we believe that safety is a behavioural culture and an attitude, and as such, is led from the top by the Managing Director.

We firmly believe that our unprecedented success in continuing to achieve zero accidents over our full trading history is a tribute to our safety-first work ethos.

This ethos and culture, coupled with our highly experienced and time-served workforce, are fundamental to our past and continued success.

Our Group Structure



Enterprise Depot Integration Platform

- Mechanical, Electrical & Plumbing
- Depot System
- Utilities
- Grip Stages 1-7
- Building Information Modelling
- Revit & Clash Detection
- Bespoke M&E Design Packages
- Computational Fluid Dynamics
- SBEM Modelling and Certification
- Product Design to Network Rail Standards
- Inventor
- Point Cloud
- Renewable Energy

- HVAC
- HV, MV & LV Distribution
- Extra Low Voltage
- Fire Alarm
- Access Control & CCTV
- Structured Cabling & Active
- Public Address & Background Music
- Audio Visual
- Gas Networks
- Public Health
- Domestic Water Services
- Building Management Systems
- Internal & External Lighting

- depotCONNECT
- Fluid Measurement (MID)
- Locomotive Turntables
- Air Quality Control
- Depot Management Systems
- Maintenance Management Information System (MMIS)
- Station Surveillance Information System (SSIS)
- Fleet Management Systems
- Asset Management Systems
- RFID Systems
- Power Factor Control
- Uninterruptible Power System
- Environmental Fluid Control

- Planned Preventative Maintenance
- 24/7/365 Call Out
- Controlled Emission Toilets
- Carriage Wash Machines
- Fuelling & Oil Systems
- Depot Protection Systems
- Depot Signalling Systems
- Fume Extraction
- Mechanical, Electrical Plumbing
- Building Automation Systems
- Jacks & Cranes
- Gantry Systems
- Compressed Air
- AdBlue
- Coolant Systems





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Headquarters



Sales Office



Distribution Centre



Manufacturing

Maintenance Services

Mission Statement

To exceed our client's expectations and objectives by being the first choice service provider and solutions specialist for rail depot systems through the continuous availability of our support, range of services, technical excellence, innovation and efficient deployment of resources.

Company Overview

Emeg Maintenance Division (EMD) has more than 20 years' experience in the provision of rail depot maintenance and specialises in post-install aftercare, uptime and lifecycle replacement of depot systems, providing a comprehensive range and the very highest levels of depot maintenance services. We're a 'onestop-shop' for depot operators, providing services ranging from basic plant failure attendance cover to planned preventative and condition based maintenance.

Depot systems are vital to the effective operation of UK railways. Carriage Wash Machines, CET and fuelling systems are all vital to the timely turnaround of rolling stock. High-usage uptime of these systems, often in demanding conditions, is fundamental to the operation of the depot. Planned 'preventative maintenance' regimes are therefore an essential and mitigating provision, as is the ability to respond to plant failures when called upon, with the relevant skills, knowledge and service history.

Employing a consistent workforce of skilled problem-solvers, from pipe fitters, electricians and gas installers to heating & ventilation engineers, supported by our experienced project management teams, Emeg Maintenance Division focuses on continuous improvement across the business to provide its clients with a best-in-class depot maintenance service provision.

Products and Solutions

Rail depot maintenance solutions

Our solutions encapsulate the planned and reactive maintenance of the majority of depot shed equipment and plant items used to service rolling stock. Our range of services are tailored to meet the requirements of our clients in the following areas;

- ◆ Standard or bespoke planned maintenance.
- ◆ 24/7 reactive maintenance.
- ◆ Warranty and aftercare on Emeg installed products.
- ◆ Lifecycle management, including overhaul & replacement of depot equipment.
- ◆ Site surveys, including asset condition and lifecycle assessments.



Emeg Maintenance Division has the ability to maintain any depot plant and equipment – we aim to provide a one-stop solution. Our range of services for depot plant and equipment maintenance covers:

- ◆ Carriage wash & underframe cleaning machines
- ◆ CET systems
- ◆ Depot protection systems
- ◆ Fuelling systems
- ◆ Oil, lube & gas storage and distribution
- ◆ Coolant & anti-freeze
- ◆ Heating & ventilation
- ◆ Boosted cold water systems
- ◆ Drainage & effluent
- ◆ Leak detection
- ◆ Electrical jacks
- ◆ Gantry cranes
- ◆ AdBlue
- ◆ Shore supplies
- ◆ Shunting vehicles
- ◆ Interceptors
- ◆ Air & sand dispensing systems
- ◆ Security & CCTV systems
- ◆ Yard & internal lighting
- ◆ Industrial doors

Our periodic planned maintenance visits and achievement of industry-leading service levels will result in full accountability and honest appraisals, greater levels of data to mitigate plant failures and improved lifecycle expectancy and equipment renewal dates, which allows us to serve depot operators better and promote solutions in advance of problems occurring.



Maintenance Clients Include:



Design Services

Emeg's design 'centre of excellence' is based out of our Manchester office. The team consists of professional engineers, system architects and designers with skill sets encompassing various electrical and mechanical disciplines.

With the experience gained from our rail, engineering and construction industry background, we have the ability to resolve design problems with viable, cost-effective solutions for clients within all branches of rail engineering.

The team's extensive experience in building services design from the conceptual stage to site installation, include the following services:

- ◆ Electrical
- ◆ Mechanical
- ◆ Telecoms

Through Emeg's proactive and strategic approach to rail and building engineering services and design, we produce solutions that are highly sustainable while representing exceptional value for money.

We pride ourselves on developing and producing design strategies, in conjunction with structural engineers and architects, to provide energy-efficient, cost-effective multi-service designs where required.

Construction based knowledge for practical design solutions

Our electrical design engineers have experience in designing and implementing all electrical services within Network Rail facilities, including service and accommodation supplies, design and modelling of complete electrical infrastructure (from private HV networks to LV supplies), mains power distribution, lighting (general, emergency and external), small power, fire alarm and security.

Mechanical design engineers are also an integral part of our integrated design team, offering design solutions for all mechanical services.

Our mechanical design services mainly focus on heating, ventilation and air conditioning applications for aspects of the built environment.

Our building services design engineers specialise in sustainability and low-cost, low-carbon building solutions, incorporating the latest energy-efficient technology to achieve the required BREEAM rating. Low and Zero Carbon (LZC) technologies are also available.

BIM (Building Information Modelling)

Emeg has the ability and experience to take a Bentley Microstation or Autodesk Revit Dynamic Modelling approach to M&E solutions. We are fully BIM ready in terms of policy, processes and compliance. We deliver valuable modelled data and design outputs for all our projects.

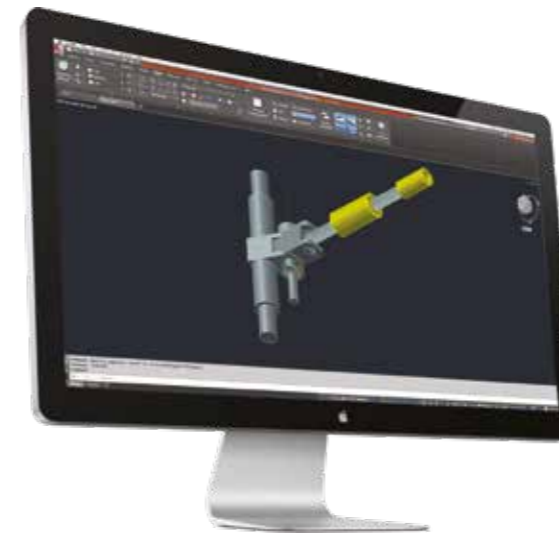
Design Software



Electrical Design Services

Emeg has the in-house capability to design electrical systems from 110V and below through to 33kV. The more usual electrical systems that Emeg design are HV, MV and LV distribution, traction power distribution, internal / external lighting and emergency lighting, platform and car park lighting, depot and high-mast lighting, general power and the like, i.e. all aspects of electrical works found in stations, depots and the general rail infrastructure.

In addition, Emeg's designers provide the electrical designs associated with Emeg's products, such as shore supplies, carriage wash machines, CET and Depot Protection System (DPS).



Mechanical Design Services

Our main focal points of mechanical design are heating, ventilation and air conditioning applications. We can provide bespoke heating solutions to cater for the exact requirements of the client and end-users. This is typically coupled with a strategic ventilation system, resulting in a fully-automated scheme controlling heat and air distribution through the building.

On the other end of the scale, we offer solutions for the more user-orientated commercial facilities, i.e. office blocks, station buildings and depot management suites. Occupational comfort tends to be the primary focus for these developments, where our detailed assessments enable an appropriate design solution to be installed.

Telecom Design Services

Our telecoms design engineers can offer the complete package from design conception to approved-for-construction detailed design and CAD drawings. Emeg also has expertise in IT and telecommunications hardware, software and networking services.

We specialise in the design and installation of a variety of telecom voice and data system solutions. Certified technicians work directly with clients and end-users on complex requirements relating to the design of new installations and initial implementations. Emeg is committed to providing a dedicated, efficient and reliable design service without compromising on quality.

Depot System Design

Emeg has the in-house ability to provide complete turnkey packages for all depot systems, including all accompanying M&E works depot-wide and within the various system plant rooms. Emeg's design and construction teams have extensive experience in:

- ◆ Depot Protection Systems (DPS)
- ◆ Carriage Wash Machines (CWM)
- ◆ Controlled Emission Toilets (CET)
- ◆ Fuel dispensing systems
- ◆ Oil dispensing systems
- ◆ Coolant dispensing systems
- ◆ Adblue dispensing systems
- ◆ Automated sand dispensing systems
- ◆ Tanking water dispensing systems
- ◆ Hot and cold water systems
- ◆ Shore Supplies

All of Emeg's systems can be tailored to meet client requirements, Network Rail standards and the specific constraints of the site or location. Emeg has been involved in various Network Rail services roll-out programmes, such as the Northern Hub electrification programme, to deliver fully operational train maintenance depots to service new and upgraded rolling stock and assets. Our design team is involved from the initial concept stages through to depot handover and they'll ensure the original quality, safety, programme timescales and budget aspirations are maintained.

Design Accreditations



Business Techniques





Smart Rail Integration System



Analytics & System Optimisation

Data Logging

Secure Communication



Emeg
Rail Systems



- depotCONNECT® Benefits:**
- Process optimisation
 - Audit trail
 - User friendly
 - Material usage/monitoring
 - Planned procurement
 - Full transparency
 - Greater process efficiency
 - Planned/predictive maintenance
 - Reduce system downtimes
 - Increased productivity
 - Modular & flexible



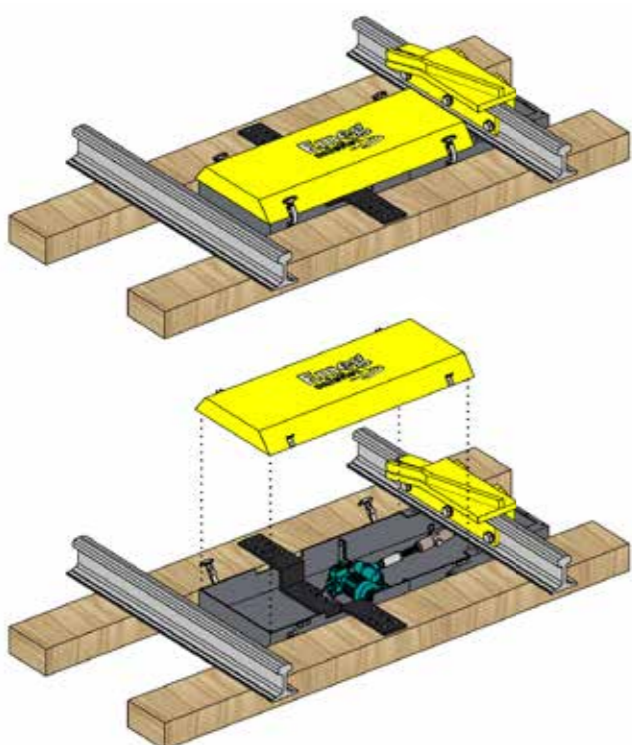
Intelligent Depot Protection System

Introducing the Emeg safeNet™

Uniquely, Emeg's safeNet™ Depot Protection System can be configured to operate exactly in accordance with specific and unique depot operating procedures and practices, provided always that the resulting system is a safe solution.

Emeg's safeNet™ Depot Protection System incorporates features such as bespoke software programming, automatic powered derailleurs / wheelstops, intelligent PLC controllers (ROLOs) with or without HMIs, a PC Head End (optional), individual data keys, train detection, visual and audible warning systems and a robust, reliable control network.

One advantage of Emeg's safeNet™ Depot Protection System is that each system is designed, manufactured, installed and can be maintained by Emeg's own internal staff; no other system can offer these services and ongoing support.



**PADSnet®
APPROVED**



**WORKFORCE
SAFETY**



**INTERFACE
OPTIONS**



**REMOTE
MONITORING**

Features & Benefits

- Safety of the personal from the train in operation.
- Ensures rail vehicle movements are controlled with no risk to staff.
- Flexible, user-friendly intelligent network distribution system, protecting your depot.
- safeNet™ can be tailored to suit existing depot procedures.
- Interface with existing depot systems.
- Remote monitoring.
- Complete turnkey solution.
- Network Rail PADs Approved Emeg equipment.

The safeNet™ control panel is easy to operate and is equipped with the main PC and a Human Machine Interface (HMI) screen.

The HMI is touchscreen operated and provides interactive views of the system in real time (see opposite).

The views opposite are just typical sample views. The actual HMI screens will be developed during design to accurately reflect the DPS at the depot.

The first three screens can be accessed by enabling the status of each road and the names of the actual operatives that are logged onto a road at any one time.

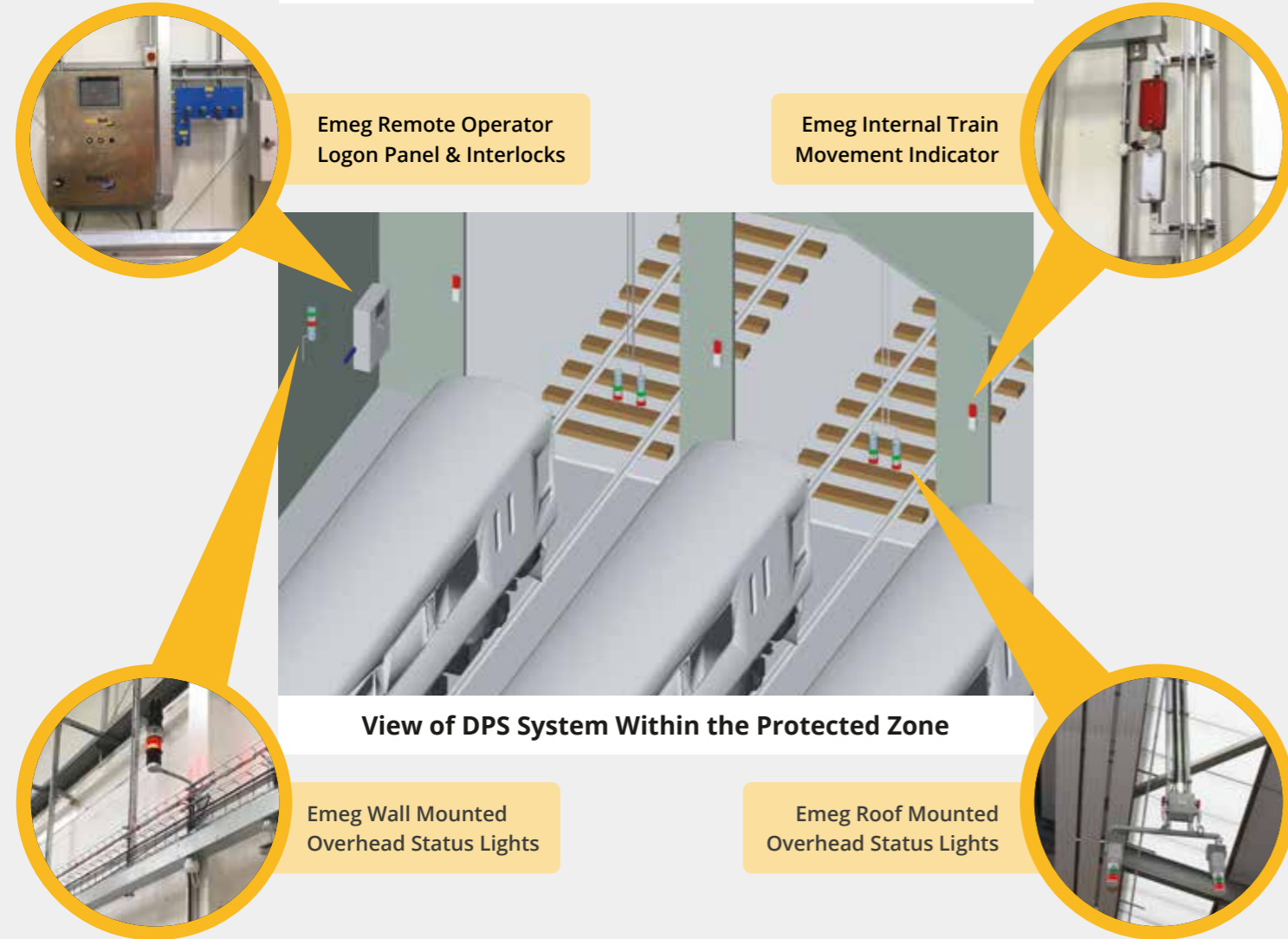
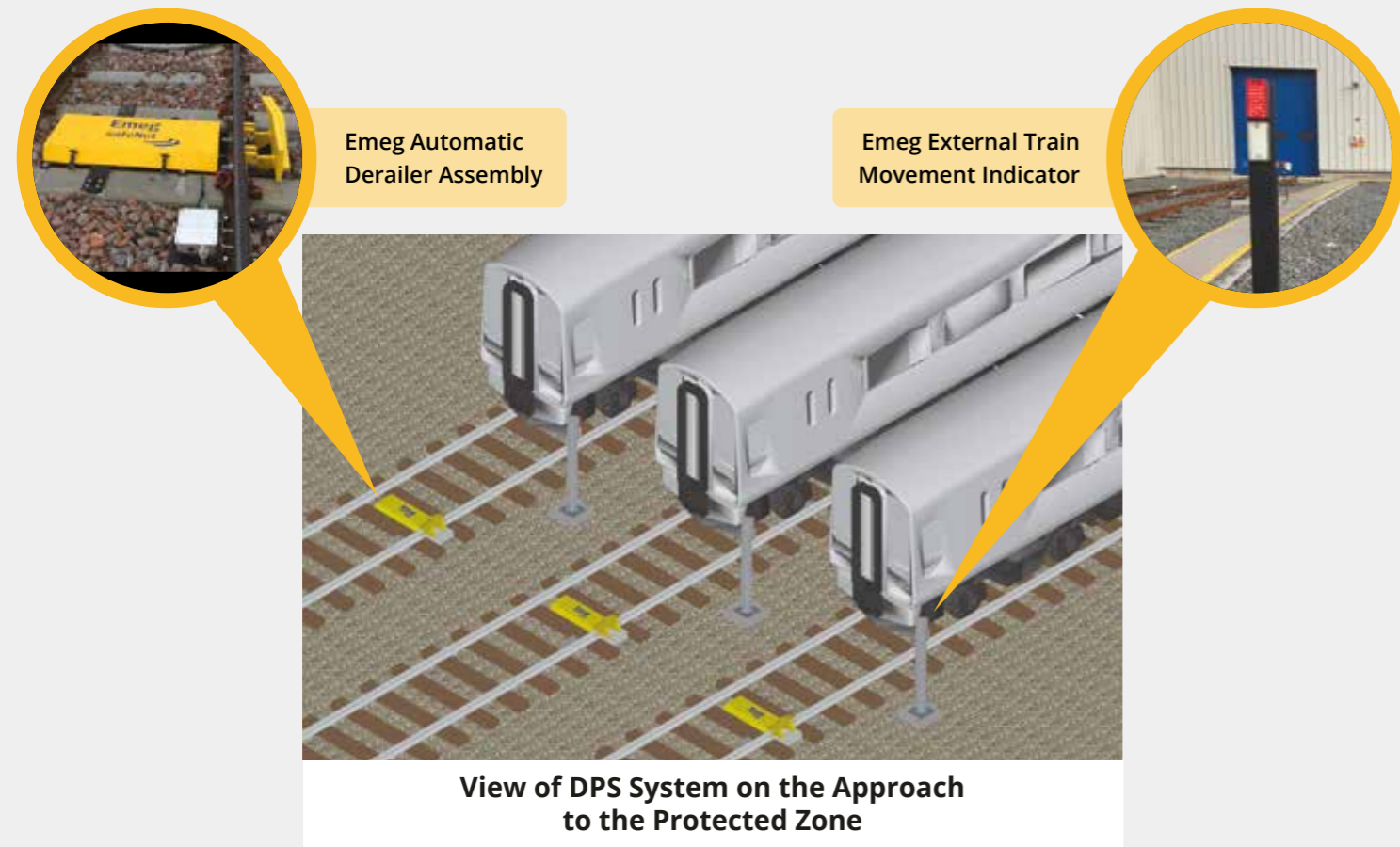
The Emeg safeNet™ Depot Protection System is based around a system of 'Data Keys' to allow personnel at the depot to work safely on a specific road within the depot shed or siding.

The 'Data Keys' are unique to each person authorised for their use and are encoded with data pertinent to its owner. Although the data keys provided at completion will be encoded with the relevant personnel data, it will be possible for a designated person to programme/encode additional keys at the specific DPS panel. The keys are also colour-coded for each level of use.

The data keys are programmed to one of five access levels:

- Level 1 - Contractor
- Level 2 - Depot Cleaner
- Level 3 - Depot Operative
- Level 4 - Depot Supervisor
- Level 5 - Depot Manager





Product Summary

Emeg's **safeNet™** Depot Protection System (DPS) is a system designed to keep people safe within the designated 'protected' zone from unauthorised train movements – into and out of the zone – and safe from harm from other possible elements within the protected zone, such as the OLE etc. The 'protected' zone can be a road or roads within a workshop, or can be designated sidings or other areas within rail depots.

User Protection

Given the above, Emeg's **safeNet™** Depot Protection System (DPS) is a safety critical system in the operation of the depot. The principles of the DPS operation require that any user, such as the following list, would have to log on to the DPS as a mandatory requirement of working within each 'protected' zone within the depot:

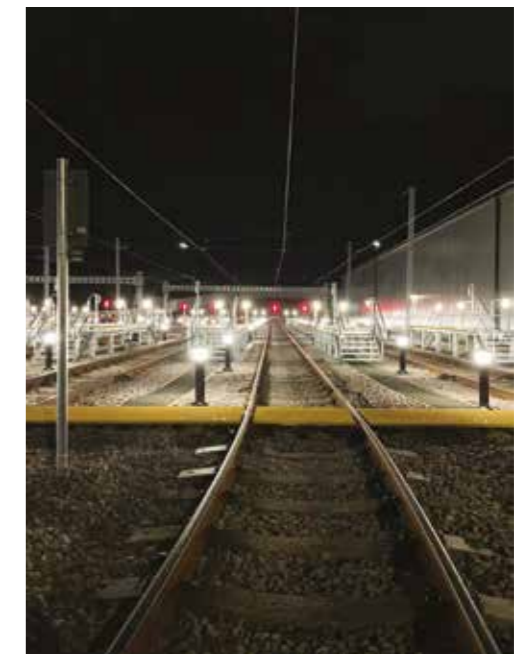
- A member of the regular depot staff
- A visitor to the depot
- A contractor who is working for the depot

Failsafe Controls

A user wishing to work on a road that is protected by the DPS would log onto the Remote Operator Log On (ROLO) panel associated with that road by way of a User Key. The User Key is a unique physical key which is programmable for the access limitations of an individual user. Whilst a user is logged on to the system, the road on which the user is logged cannot be unprotected and rolling stock cannot enter or leave the protected road itself. When all users are logged off a specific road, the depot's designated person (usually the Team Leader) can then unprotect this specific road, which will enable the Team Leader to initiate any required train movement into or out of said road.

Audio & Visual Alerts

To enable a safe movement, in or out, to take place on a specific road the DPS is equipped with a number of road specific audio and visual warning systems, interfaces, motion sensors and derailleurs. When an authorised train movement is selected, the derailer will be lowered to enable the authorised train movement. As the train passes the derailer it will hit the trackswitch which will initiate the train movement sirens. The sirens can be set to various tones and noise levels at the depot's request. Once the movement has taken place, it is normal practice to protect the road once more. Before this is allowed by the system, it will check the PIR at the relevant derailer is clear to ensure the train has passed the derailer before raising it.





Controlled Emission Toilet Extraction and Flushing System

Introducing the Emeg e-vac™

The versatile and efficient clean locomotive toilet solution to empty and rinse away the day's waste, leaving clean, ready-to-use conveniences for tomorrow.

Decades of rail depot installation and maintenance experience have contributed to the evolution of Emeg's e-vac™ automated Controlled Emission Toilet (CET) extraction and flushing system.

Systems can be positioned to suit the client's needs and allow for universal apron coverage for all rolling stock in the depot, meaning that engines will not be limited on where they can be stabled.

Mobile units

We also supply mobile toilet extraction systems with vacuum pumps, which offer greater flexibility. The rinsing and subsequent refilling of the train cisterns can be included.



SAFE & HYGIENIC



14M 360° CAPACITY



CHOICE OF FLUSHING METHOD



INTELLIGENT DATA LOGGING

Features & Benefits

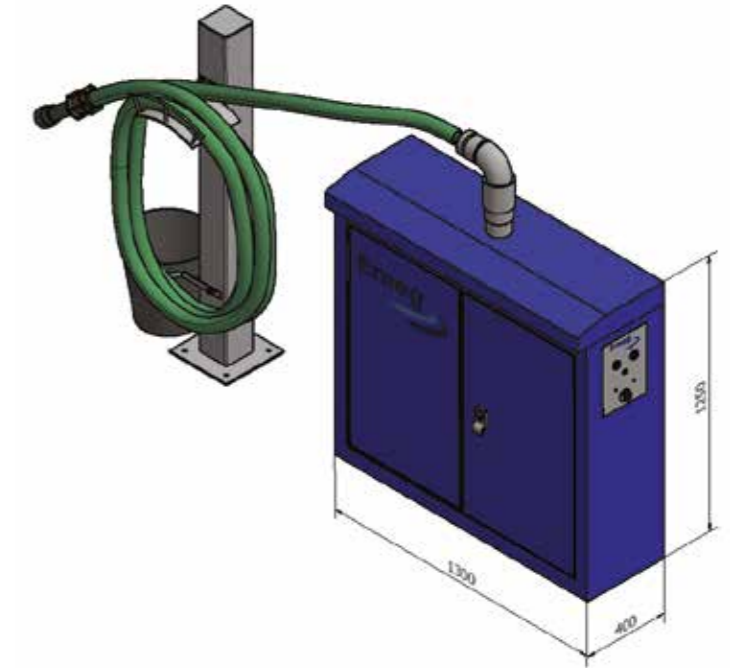
- Controlled Emission Toilet (CET) extraction and flushing system
- Efficient automated process
- Semi-automatic, manual, mobile and standalone systems also available
- Compact, low maintenance design
- Universal apron coverage available
- Fast and effective operation
- Intuitive operator interface
- Versatile systems to suit all depots
- NR/L2/RMVP/27176 compliant
- Bespoke column-mounted solutions available
- Emeg maintenance package available
- Intelligent data logging
- Duty/standby pumps and macerators

Why e-vac™?

To ensure safe, hygienic and efficient removal of waste from the controlled emission toilets, leaving a clean system for the next day's use.

Ease of use for the depot staff; two connections to make and a button to press at each CET point then off to the next point and leave the dirty work to the e-vac™ system, which will automatically move onto the next CET point when complete.

The e-vac™ CET system has been developed by our highly experienced design, installation and maintenance teams, who have worked closely with rail depots for decades, so any drawbacks experienced with alternative CET systems have been eliminated.



Alternative Flushing

Flushing through the CET hose or the alternative flushing hose can be chosen before the CET cycle is started.

Clean Working Environment

e-vac™ CET systems are not only easy to use but also provide depot staff with a clean working environment.

CET Depot Flexibility

e-vac™ systems are capable of working in depots of all shapes and sizes with pipework running in troughs or up and over trains/equipment to reach the CET points.

Network Rail Requirement

Modern trains are now equipped with toilet retention tanks that can be safely and hygienically emptied each night when they return to the depot via a Controlled Emission Toilet (CET) system.







Intelligent Exhaust Fume Extraction Arm System

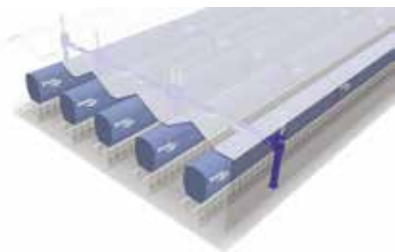
Introducing the Emeg e-fume™

The versatile and efficient clean depot ventilation solution to remove harmful diesel exhaust fumes from engines at the source, improve the working environment and safeguard the workforce from unnecessary inhalation.

Taking guidance from 'HSG258 (Third Edition) 2017: Controlling Airborne Contaminants at Work'; and 'HSG187 (Third Edition) 2012: Control of Diesel Engine Exhaust Emissions in the Workplace', Emeg have developed the specialist e-fume™ fully adjustable local extract ventilation (LEV) system to improve depot air quality.



Systems can be positioned accordingly to suit the clients' needs and allow for universal coverage for all rolling stock in the depot, meaning that engines will not be limited on where they can be stabled and air quality will not be compromised.



Depot Protection: e-fume™ systems can be fully integrated and interfaced with Emeg's safeNet™ Depot Protection System ensuring a safe depot working environment is maintained.

Patent pending: application number GB 2107335.8



MAX TEMPERATURE



WORKFORCE SAFETY



HIGH EXTRACTION RATE



REDUCED ENERGY USAGE

Features & Benefits

- Protects staff and personal from the life threatening affects of diesel locomotive exhaust fumes.
- Removes harmful fumes at the source.
- HSG258 compliant.
- Extremely versatile - two axes of movement for maximum road coverage.
- Manufactured from low toxicity composite moulded GRP to BS EN 45545 HL3 standards.
- Lightweight GRP construction - suitable in OLE environments.
- Bespoke wall or column mounted solutions available - no structural dependency.
- Simple and efficient hand-held controller.
- Fast and effective operation.
- Efficient, low maintenance and compact design.

Why e-fume™?

The purpose of a local exhaust ventilation (LEV) type system is to contain, capture and remove the target contaminant. In doing so, the contaminant will be drawn away from the operative zone. If the harmful particles are not removed at the source, they will dissipate into the surrounding air and settle in the depot environment.

e-fume's™ bespoke, one-of-a-kind system removes diesel fumes at the engine exhaust locations before they can escape into the environment; therefore, improving the working environment and safeguarding the workforce from fume inhalation.

Air contamination due to diesel fumes within depots is a big industry problem. The World Health Organisation now classifies diesel engine exhaust emissions as a 'class one carcinogenic agent', which puts it in the same category as asbestos, mustard gas and tobacco for causing respiratory system-related cancer.



Swing

The fan box is rotated on a slewing ring and gearbox configuration through a possible range of 0-180°, sweeping the boom across the depot and into position, providing smooth movement and minimising vibration.

Slide

The extract hood is positioned laterally along the boom, powered by an efficient, integral belt-driven linear transmission and positioning system, providing optimum levels of accuracy, precision and speed.



Carriage Wash Machine System

Introducing the Emeg e-wash™

The versatile and efficient locomotive external cleaning solution to wash away the day's dirt, leaving clean, ready-to-use carriages for tomorrow's passengers to enjoy.

e-wash™ systems meet a wide range of demands and the highest levels of washing performance, efficiency, cost effectiveness, sustainability and most importantly, health and safety.

Systems can be sized and located to suit the client's needs, from compact entry-level solutions to high performance systems with innovative functions. We also offer a temporary carriage wash machine.

Our in-house design specialists can help with:

- Design
- Install
- Manufacture
- Maintenance



MODULAR SOLUTION



FULLY AUTOMATED



REDUCE WATER CONSUMPTION



INTELLIGENT DATA LOGGING

Features & Benefits

- Carriage Wash Machine (CWM) system
- Efficient automated process
- Brush or flail
- Bodyside, eaves, skirts, roof and cab end washing
- Recycling options
- Compact standard 12 rotor brush wash
- Compact standard 8 rotor flail wash
- Single and bidirectional washing
- Remote wash selection
- Versatile systems to suit all depot requirements
- NR/L2/RVE/0130 compliant
- Automatic frost protection drain down
- Drivers' information sign
- Speed indication signs
- Emeg maintenance package available
- depotCONNECT® intelligent data logging

Why e-wash™?

Emeg has the inhouse ability and experience to provide the complete carriage wash package in e-wash™ - from design and installation to training and maintenance. Our decades of working alongside rail depots has enabled Emeg to identify and remove issues encountered by operators to ensure a smooth and efficient cleaning process.

The level of operator interface with the e-wash™ is entirely at the client's discretion, from a fully automated wash system requiring no interaction to a wash-by-wash selection for those requiring a more hands-on solution.

The e-wash™ system can be tailored to suit all depot types and sizes, resolving issues such as spacial constraints, environmental conditions and varying rolling stock. Each e-wash™ is individually designed and customised to meet the client's requirements.

Temporary Wash

Temporary e-wash™ systems are available to provide an uninterrupted washing service while an existing carriage wash machine is removed and the new e-wash™ is installed.

Overspray Brushes

Overspray brushes are installed on the external and exposed surfaces of the e-wash™ to ensure that only the trains get soaked.

Cleaning System in Automatic Washing Machines

Our cleaning system is sustainable and resource-saving, with the lowest possible risk to humans, machines and the environment. Our innovative technology uses the hydrophilic properties of collagenous proteins to clean rail vehicles and trains, including underground carriages.

Proud to Partner with Crous Chemicals

See page 56 for more information



Permanent carriage wash machine



Carriage wash machine in action



Temporary carriage wash machine

PH Monitoring

PH monitoring is available on the outfall from the e-wash™ system, with the potential to hold any waste until neutralised sufficiently to be sent to drain.

Profiled Brushes & Flails

Brushes and flails are profiled to suit the depot rolling stock to ensure all required carriage surfaces are evenly cleaned.



Proud to Partner with Crous Chemicals

Keep Your Fleet Clean & Shiny

Bringing you the most advanced chemical solutions to help protect your fleet through all weather conditions. Emeg are proud to collaborate with Crous Chemicals Switzerland and LECM UK to offer a range of products and services to ensure total fleet protection and maintenance.

With a comprehensive range of cleaning agents, Crous Group is the one-stop-shop for preserving the value of your rail fleet.



Products and Services



Graffiti Removal



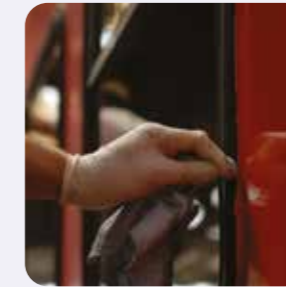
Bodywork Repair



Industrial Painting



Upholstery Cleaning



Sealing



Glass Renovations



Preservation



Basic Cleaning



Glass Foiling

Trusted by:



See page 56 for more information



Intelligent Fluid Mixing

Introducing the Emeg e-mix™

Intelligent, efficient & highly accurate fluid mixing dispensing system for all depot fluids regardless of viscosity, either a single system or as part of a integrated network interfaced through depotCONNECT® and the depot's own Maintenance Management Information System (MMIS).

Features & Benefits

- Dual inverter controls allow automated liquid distribution through small diameter/restrictive pipework systems.
- Automated mixing of water-soluble liquid.
- Accurate and repeatable control of concentration.
- Tight emulsion/small oil droplet size ensures optimal liquid performance and minimal liquid drag-out.
- Reduces liquid consumption by up to 25%.
- No mixed liquid stored.
- Delivers mixed liquid at 90 litres per minute.
- Conforms with Water Authority regulations.



Fluids used

- Adblue
- Glyco
- Coolant
- Hydraulic oil
- Fuel
- Lubrication oil



VOLTAGE OPTIONS



WATER SUPPLY REQUIRED



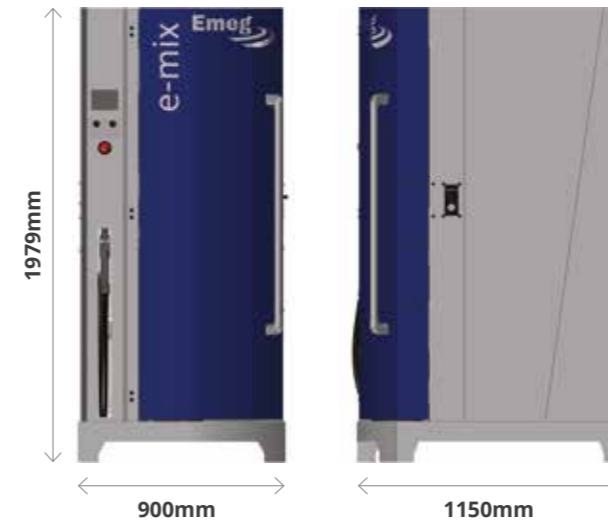
LIQUID DISPENSING RATE



AS STANDARD OR TO SUIT BESPOKE REQUIREMENTS



Dimensions



Options

- Auto top up units - automatically control sump levels via a distribution pipework system.
- SmartSump - automatically controls sump levels via a distribution pipework system. Tramp oil and particles removed automatically, bacterial growth controlled.
- Service contract.
- XIOT connectivity - monitor and control via cloud.

Features

- 800 litre water tank - no reliance on mains water pressure.
- Dispensing rate up to 90 litres per minute.
- Standard concentration range of 0.5% to 20%.
- Soluble oil level in barrel/IBC displayed on screen (0-100%).
- Records liquid volume and average concentration delivered since last reset.
- Low soluble oil/low water shut-off with warning.

Results

- Fast, efficient and accurate delivery of liquid to point of use.
- Reduces liquid consumption costs by up to 25%.
- Reduces manual handling risks associated with manual mixing and liquid transfer.
- One e-mix can supply an entire workshop.

Recommended Installation	Liquid Delivery Rate (l/m)	Voltage (V)	Current Draw	Dimensions (mm)			Weight (kg)
				H	W	D	
The e-mix is capable of delivering mixed liquid locally via the dispensing gun or throughout the workshop via a distribution pipework system.	90	230	≤ 13 Amps	1979	900	1150	340



Fuel Services

Introducing the Emeg e-fuel™

Our range of fuel storage solutions and fuel dispensing pumps are constructed from the highest quality materials to ensure full protection against the elements in the harshest of environments. Our long-lasting units provide various options, with fuel transfer pump fast-flow rates and integrated fuel management systems.

Why e-fuel™?

Emeg has the in-house capability to design, build and maintain complete fuel storage and dispensing systems. Each design takes into consideration not only the client requirements and Network Rail standards but also the environmental hazards the system presents, as each system must comply with the Pollution Prevention and Control Act 1999.

Emeg's fuel dispensers are designed to provide the option to the client to either refuel a train by using a handgun, a flyte coupling or both. The fixed fuel dispensing units are either located to service specific points on the rolling stock or to provide universal coverage for the servicing apron. The combination of universal coverage and a choice of fill method gives the client the ability to fuel all rolling stock.

Flow meter

Dependent upon the client, but as a norm, Emeg provides a flow meter calibrated to HM Customs standards within each of Emeg's bespoke stainless steel fuel dispensers. Emeg's specially designed control system enables the depot to automatically store the fuelling data train-by-train as the refuelling process is carried out.





Air Purifiers and Ventilation Units

Indoor Air Quality

Proper ventilation is the key to high-quality indoor air. Emeg are dedicated to providing excellent indoor air quality within the rail industry both in administration facilities and depot shed buildings.

Recent events have made indoor air quality (IAQ) one of the most trending topics, highlighting the connection between indoor air quality and the wellbeing of the occupants of buildings. We spend more time inside buildings than outside, with jobs and lifestyles that force us to spend more than 80% of our time indoors.

Exposure in these environments to air contaminants - from dust to spores, bacteria or viruses, as well as the chemical compounds released by paint, claddings and furniture - has a direct impact on our immune systems and can cause anything from mild discomfort in our respiratory systems (for example, irritation and dryness) to much more serious health problems such as allergies, especially when the exposure to the contaminants is prolonged.

It has been proven that poor IAQ encourages the transmission of infectious diseases. Maintaining optimal indoor air quality has become a priority - a highly important priority during this pandemic situation. Having equipment and systems that can decrease the virus load and reduce the possibility of infection is especially important.

And it is in this search for excellence in indoor air quality where Emeg continues to work and provide solutions.

What is the solution to improve indoor air quality (IAQ)?

- ◆ Standalone air purification equipment that traps contaminants in the indoor air, turning spaces into comfortable and healthy places.
- ◆ Ventilation systems that reduce the concentration of contaminants in the indoor air, replacing it with filtered outdoor air.

Indoor air quality (IAQ) in rail buildings (offices, MDUs, TMDs, LMDs, DMUs, stations, canteens, shops, etc.) is directly related to people's health, productivity and comfort.

Standalone Air Purification Equipment

The air purifier option is ideal for premises or buildings that do not have adequate ventilation systems, or companies with facilities or spaces that lack advanced ventilation systems. This type of purifying equipment is also suitable as a ventilation accessory in the elimination of specific contaminants, including viruses and bacteria. The dirty air, laden with pollutants and odours, is sucked in by the equipment and, after circulating through the different filter stages, clean of contaminants, is returned to the interior of the premises. The continuous air recirculation process allows for a constant improvement in air quality, which solves the problems caused by poor indoor air quality.

Simple to operate, the purifiers have a multi-level filtering system that, with a suitable combination of filtering activities, removes contaminants from the air in the places where they are located.

EMAF 850 / EMAF 650

Portable air purifiers.



EMAF 420 / EMAF 350

Portable air purifiers.



CAP

Air purification units for commercial applications.



EMAF 850 / EMAF 650 Portable Air Purifiers

Applications

Air purification in commercial applications, including:

- Offices
- Commercial establishments
- Meeting rooms
- Train maintenance depots
- Light maintenance depots
- Diesel maintenance units
- Canteens
- Security offices
- Data centres
- Station circulation areas
- Rack cupboards where electronic devices are stored
- Workshops and areas where cutting, publishing or welding work is undertaken



EMAF 420 / EMAF 350 Portable Air Purifiers

Applications

Air purification in commercial applications, including:

- Offices
- Commercial establishments
- Meeting rooms
- Train maintenance depots
- Light maintenance depots
- Diesel maintenance units
- Canteens
- Security offices
- Data centres
- Station circulation areas
- Rack cupboards where electronic devices are stored
- Workshops and areas where cutting, publishing or welding work is undertaken



Model		Filters	Filtration capacity
Horizontal	Vertical		
EMAF 850 H14	EMAF 850V H14	F7+H14	Dust, pollen, spores, bacteria, viruses, fine particles in suspension (PM ₁ , PM _{2.5} y PM ₁₀)
EMAF 650 CA H14	EMAF 650V CA H14	F7 + active carbon + H14	Dust, pollen, spores, bacteria, viruses, fine particles in suspension (PM ₁ , PM _{2.5} y PM ₁₀) + odours
EMAF 650 VOC H14	EMAF 650V VOC H14	F7 + Filtro VOC + H14	Dust, pollen, spores, bacteria, viruses, fine particles in suspension (PM ₁ , PM _{2.5} y PM ₁₀) + odours + formaldehyde, ethylene, CO, SO ₂ , NO _x , VOC

Model		Clean filter flow rate (m³/h)	Dirty filter flow rate (m³/h)	Area to treat* (m²)		Sound level at maximum speed (dB)	Power supply	Power (W)	Maximum current absorbed (A)
Horizontal	Vertical								
EMAF 850 H14	EMAF 850V H14	850	600	80	60	50	230V 50-60Hz	180	1,2
EMAF 650 CA H14	EMAF 650V CA H14	650	450	60	45	49	230V, 50-60Hz	178	1,1
EMAF 650 VOC H14	EMAF 650V VOC H14	650	450	60	45	49	230V 50-60Hz	178	1,1

*Based on commercial premises with a ceiling height of 3m.

Models	Width (mm)	Length (mm)	Height (mm)	Weight (kg)	
Vertical	EMAF 850 / EMAF 650	550	520	820	50
Horizontal	EMAF 850 / EMAF 650	550	735	605	50

Model	Filters	Filtration capacity
EMAF 420 H 14P	F7+H14	Dust, pollen, spores, bacteria, viruses, fine particles in suspension (PM ₁ , PM _{2.5} y PM ₁₀)
EMAF 350 CA H14	F7 + active carbon + H14	Dust, pollen, spores, bacteria, viruses, fine particles in suspension (PM ₁ , PM _{2.5} y PM ₁₀) + odours
EMAF 350 VOC H14	F7 + Filtro VOC + H14	Dust, pollen, spores, bacteria, viruses, fine particles in suspension (PM ₁ , PM _{2.5} y PM ₁₀) + odours + formaldehyde, ethylene, CO, SO ₂ , NO _x , VOC

Model	Clean filter flow rate (m³/h)	Dirty filter flow rate (m³/h)	Area to treat* (m²)		Sound level at maximum speed (dB)	Power supply	Power (W)	Maximum current absorbed (A)
EMAF 420 H14	420	300	40	30	53	230V 50-60Hz	98	0,7
EMAF 350 CA H14	350	290	36	27	52	230V 50-60Hz	98	0,7
EMAF 350 VOC H14	350	290	36	27	52	230V 50-60Hz	98	0,7

*For commercial premises with height of 3m.

Model	Width (mm)	Length (mm)	Height (mm)	Weight (kg)
EMAF 420 / 350	380	350	708	33

CAP Air Purification Units for Commercial Applications

Applications

Air purification in commercial applications, including:

- Offices
- Commercial establishments
- Meeting rooms
- Train maintenance depots
- Light maintenance depots
- Diesel maintenance units
- Canteens
- Security offices
- Data centres
- Station circulation areas
- Rack cupboards where electronic devices are stored
- Workshops and areas where cutting, publishing or welding work is undertaken



Wall- or ceiling-mounted application

Wall- or ceiling-mounted application

The design of the product is perfect for installing purifiers in vertical furnishings in commercial establishments and offices.



Model	Width (mm)	Depth (mm)	Height (mm)
CAP-1200 H14	750	360	2,220
CAP-2300 H14	1,100	410	2,320
CAP-3600 H14	1,500	410	2,300
CAP-5200 H14	1,900	500	2,300

Model	Width (mm)	Depth (mm)	Height (mm)
CAP-1200 H14	750	360	1,860
CAP-2300 H14	1,100	410	1,910
CAP-3600 H14	1,500	410	1,910
CAP-5200 H14	1,900	500	1,910

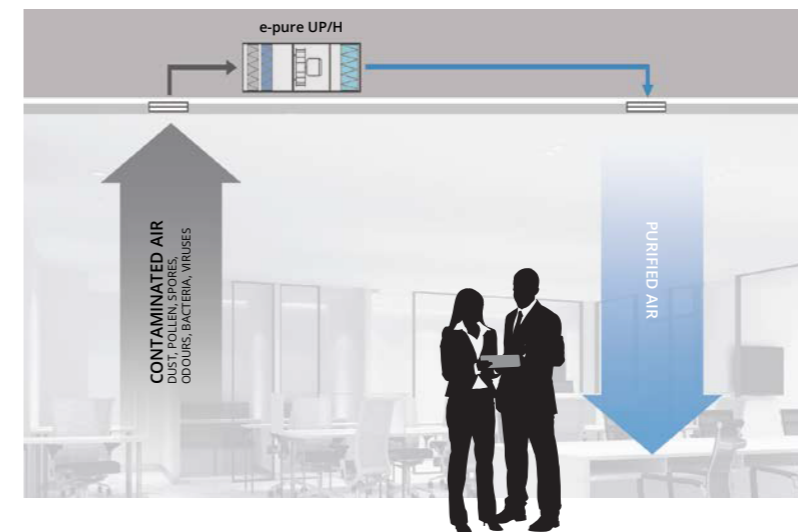
Model	Filters	Filtration capacity
CAP series	G4 + F7 + H14	Dust, pollen, spores, bacteria, viruses, fine particles in suspension (PM ₁ , PM _{2.5} y PM ₁₀)

Model	Nominal flow rate (m ³ /h)	Static pressure clean filters available (Pa)	Area to treat* (m ²)	Power supply	Power (kW)	Maximum current absorbed (A)
CAP-1200 H14	1,200	245	100 - 133	1F/230V, 50-60Hz	0,46	2
CAP-2300 H14	2,300	310	192 - 256	1F/230V, 50-60Hz	0,9	4
CAP-3600 H14	3,600	360	300 - 400	1F/230V, 50-60Hz	1,7	7,6
CAP-5200 H14	5,200	300	433 - 578	3+N/400v, 50-60Hz	2	3,8

*For commercial premises with height of 3m.

Horizontal purification unit

The design is perfect for purification systems in ceilings and false ceilings.



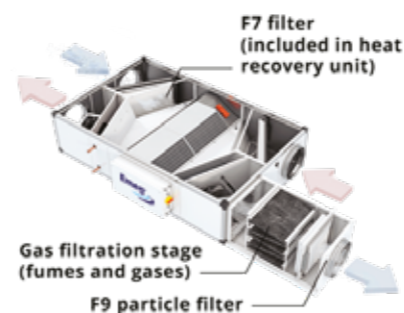
Model	Width (mm)	Depth (mm)	Height (mm)
CAP-1200 H14	360	750	1,500
CAP-2300 H14	410	1,100	1,500
CAP-3600 H14	410	1,500	1,500
CAP-5200 H14	500	1,900	1,500

Boost Current Systems Ventilation Systems: The Complete Solution

The ventilation system must be sized in such a way that guarantees the airflow needed in accordance with the occupancy and the activity of the building. Air filters in ventilation systems are essential elements in commercial areas and spaces where safety and greater health benefits are sought, in addition to a feeling of comfort. The incorporation of filters for incoming outdoor air will prevent particles entering from the external environment (dust, pollen, fine particles PM10, PM2.5 and PM1), which will guarantee the protection and comfort of the occupants. In installations located in urban areas with high levels of pollution, the filtering stages will also include processes to eliminate gaseous pollutants.

In order to guarantee the efficiency of the ventilation and filtration system, it is essential to carry out a preliminary study, taking into account the particular needs of each space or building.

The benefits may vary depending on the combination of filters we use, achieving a certain level of protection, starting with basic levels of filtration, which protect against dust, up to levels of filtration with the ability to trap fine particles, bacteria and viruses.



FB-IAQ HE

IAQ modules CADB-HE to be installed with.

They have two high-efficiency filtration stages, which give them high capacity to trap gases and particles contained in outdoor air such as H₂S, CO, SO₂, O₃ or NO_x, and PM₁, PM_{2.5} and PM₁₀ particles.



CFL-

Steel filter units for the CVTT series.

Galvanised steel filter units, with capacity for two high-efficiency filters, from G4 to F9, ideal for supplying outdoor air in industrial applications. They adapt to the CVTT series ventilation units without accessories.

UVF ECOWAT

Energy-efficient acoustically insulated ventilation units with integrated filters.

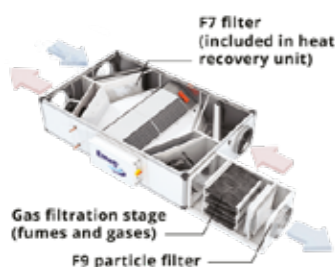
Capacity to assemble up to three filters. Filtration efficiency ePM₁₀ = 99.5%, ePM_{2.5} = 98.5%, ePM₁ = 96.2%.



Combination of filters	Filtration efficiency s/ISO-16890		
	ePM ₁₀	ePM _{2.5}	ePM ₁
M5	55%	-	-
F7	90%	83%	75%
F9	95%	91%	85%
M5+F7	95.5%	83%	75%
M5+F9	97.7%	91%	85%
F7+F9	99.5%	98.5%	96.2%

FB-IAQ HE

IAQ modules CADB-HE to be installed with.



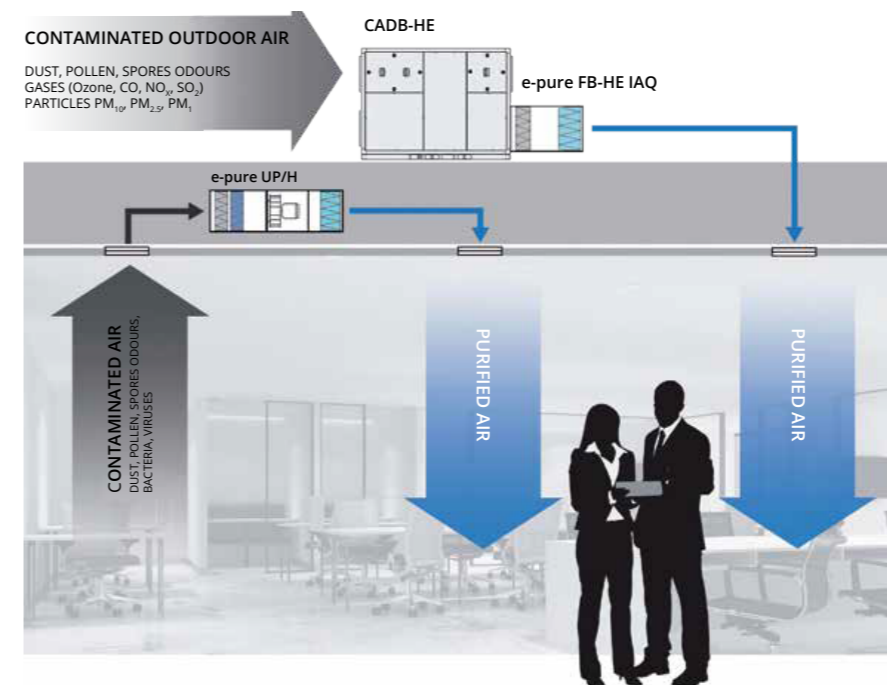
UVF ECOWAT

Energy-efficient acoustically insulated ventilation units with integrated filters.



CFL-N

Steel filter units for the CVTT series.



The complete solution
Purifiers + filter units for outdoor air.



Shore Supplies

Emeg has been designing, installing and maintaining train shore supply systems for over 20 years.

Shore supplies are required when there is a requirement to stable diesel trains at a depot or sidings for the purpose of carrying out routine servicing and maintenance. Generally, this operation is carried out when the train is not in use, during night-time hours, as it is not acceptable to have the trains powered by their diesel engines when stabled as this would create unacceptable noise and exhaust pollution.

In order to provide the mechanical and electrical services on the train to enable cleaning operations, the train can be plugged into the primary electrical network via a shore supply rather than running trains throughout the night; reducing noise and environmental pollution.

Emeg provide shore supplies to suit a variety of rolling stock applications, including 400V triple pole and 850V double pole. Shore supplies use an I.T. earthing arrangement so the main LV electrical supply for the system has to be derived from a dedicated shore supply MV to LV transformer.

The primary components of an Emeg shore supply system comprise:

- An IT MV/LV transformer
- Main LV shore supply switchboard
- Ground box complete with lead and plug set to suit specific rolling stock
- Lineside control pillar

Emeg can also adapt and re-configure existing shore supply systems to allow multiple different rolling stock to be stabled to allow maximum flexibility for depot operations.

Features & Benefits:

- Flexible and adaptable for a number of different rolling stock applications
- Robust and safe
- Range of shore supply voltages available
- Reduction in rolling stock noise and environmental pollution
- Range of ground box mounting applications to suit installation environment
- Suitable for installation in an outdoor environment

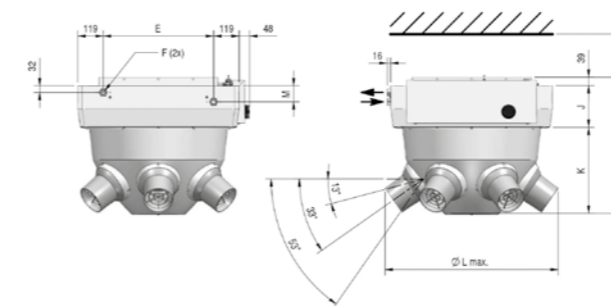


Depot Heating & Cooling Solutions

The e-jet range is specifically designed for large buildings with high ceilings such as railway depots, train stations, commuter terminals, siding sheds and factories. Their innovative multi-directional design induces movement in the air around the unit ensuring warm or cool air is distributed evenly throughout the room. As a result, they are not only more effective than conventional products they are also more efficient, delivering energy savings of up to 15% compared to traditional products.

e-jet Water Heated & Ambient

Warm air naturally rises, e-jet heaters capture it at ceiling height and optimise its distribution at floor level using the inductive effect. When used with our intelligent automatic controls, the fan speed and heat output are automatically adjusted to ensure a consistent, comfortable climate is maintained at floor level without any user intervention.

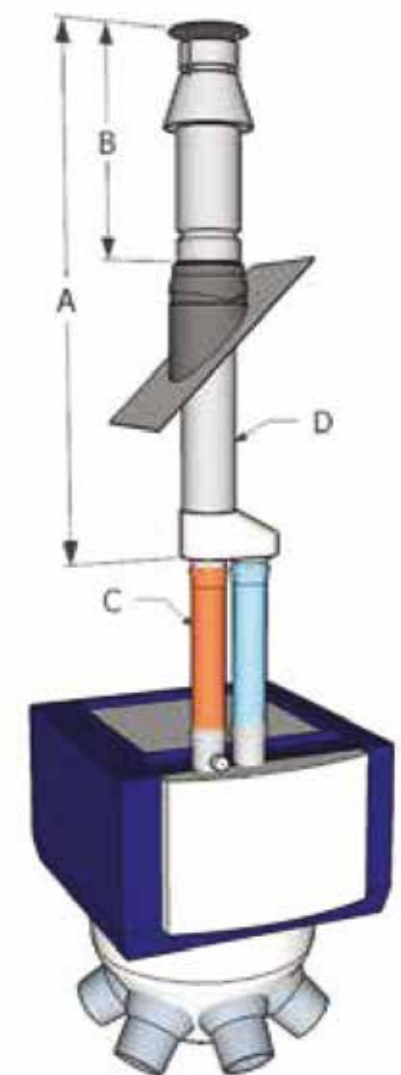


e-jet Gas

e-jet gas heaters circulate warm air in the same way as e-jet water heated and ambient units, using the induction effect to optimise distribution throughout the room. Gas air heater units have an integrated closed system gas burner. This gas burner draws in air from outside and exhausts combustion gases externally. Heat output is automatically regulated by an intelligent MultiTherm C Thermostat.

e-jet Cooling

The latest addition to the e-jet range, e-jet cooling provides both heating and cooling from a single unit. e-jet cooling works in combination with a cold and warm water source. Warm air is drawn into the e-jet, cooled, then released and distributed evenly throughout the room using the induction effect. Condensation from the cooling process is collected by a built-in demister, and can be drained away using a gravity drain or a mechanical pump, therefore there is no restriction on where the cooling unit can be sited.





Ancillary Range

Introducing the “New Era” of grinders!

A uniform and correct treatment of solids is necessary in wastewater and sludge handling systems. However, it is often difficult to choose the right solution at the right cost. Our TG series for solids' size reduction is one of the most innovative, cost-effective solutions on the market. We are proud of the extremely tough design, combined with a flexible internal component configuration. Furthermore, the accessories and myriad design options mean you can create YOUR shredder without breaking the bank.

Features & Benefits

Equipment protection

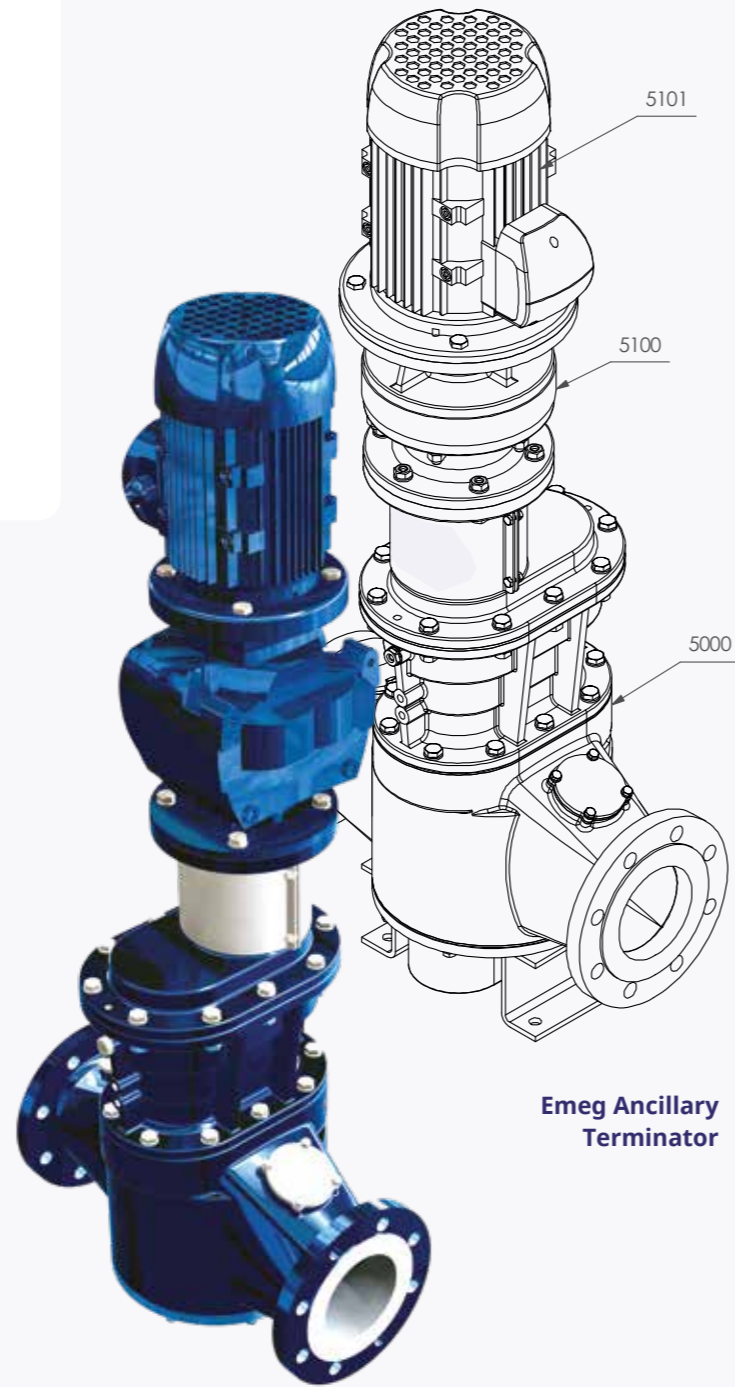
- Protect your pumps from solids
- Increases the lifetime of components subject to wear
- Protect your critical equipment from damages due to tough solids
- Reduce unforeseen shutdown

Proper treatment operations

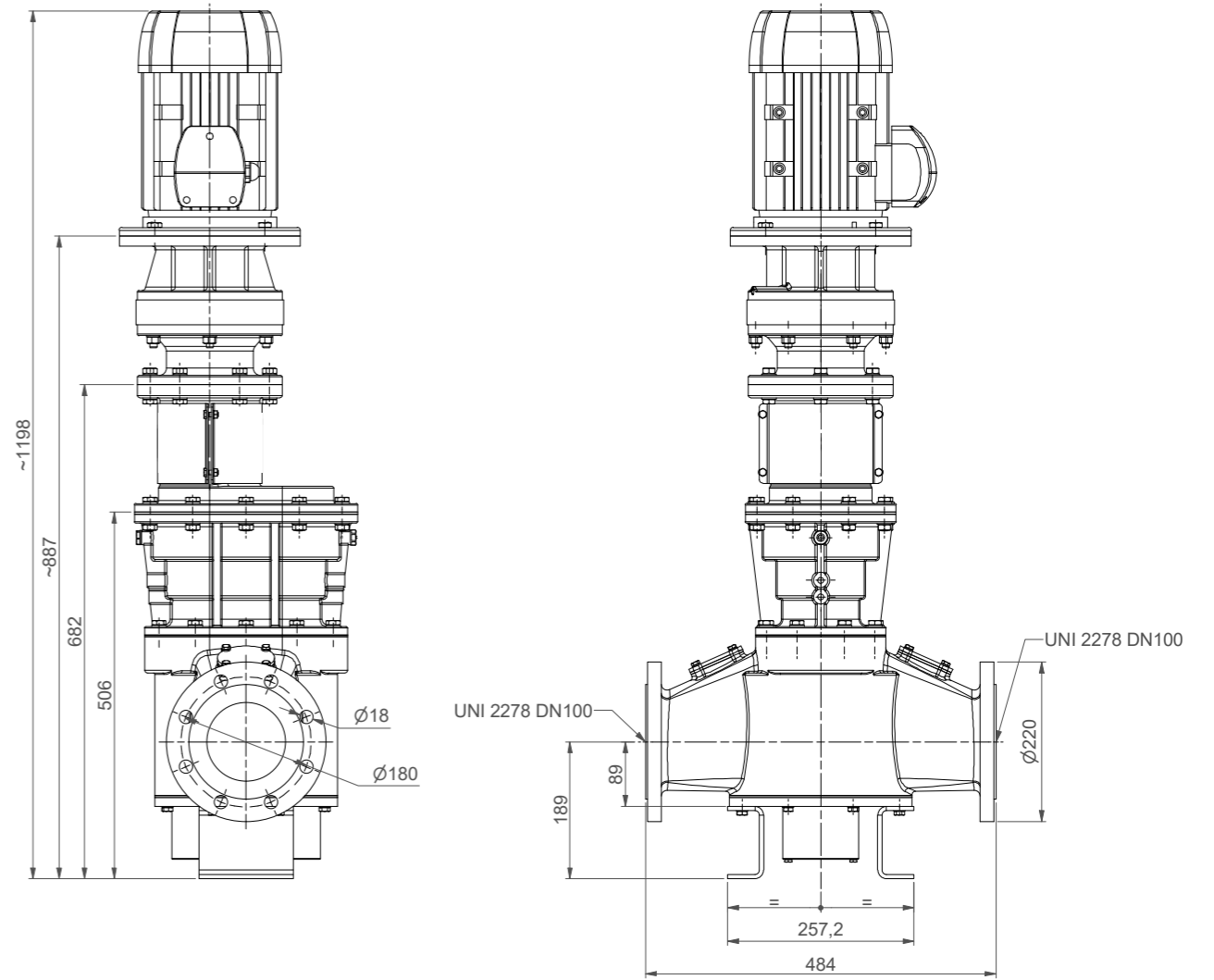
- Block inorganic materials (organic stays in the process)
- Less waste compared to screening
- Improve processing quality

Reduce operating costs

- Smaller piping and pumps required
- Shorter pump run cycles and lower electrical consumption
- A cleaner plant us a more efficient plant



Emeg Ancillary Terminator



Model	Power (kW)	Flow Rate (m³/h)	Pipeline Size (mm)	Pressure Drop	Standard Dimensions			Approximate Net Weight (kg)
					A	B	C	
TGR 5	1,1 - 1,5				1180	629	140	220
TGS 5	1,5 - 2,2	100	100	0,05	1216	700	212	250
TGC 5	1,1 - 1,5				1263	783	294	230

TGR = Standard version, cantilever design.

TGS = Strong version with second bearing housing for heavy-duty application.

TGC = Standard version with stone catcher.



Pumps

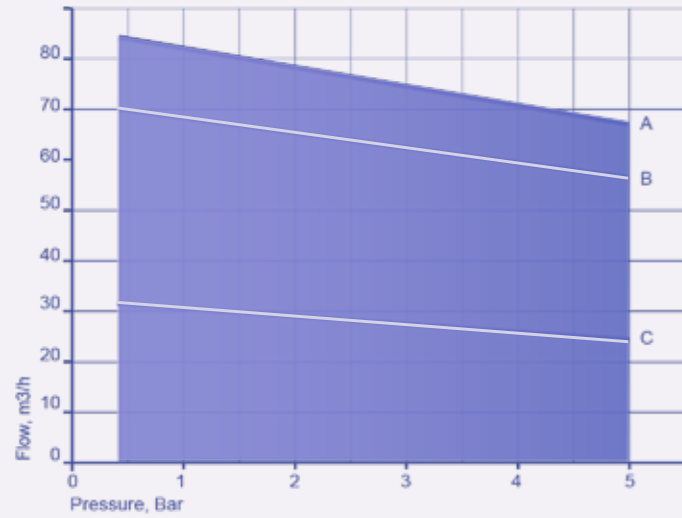
Technical data

Model	Flow l/100 rev.	Max differential pressure bar	Min speed R.p.m	Max speed R.p.m	Max. flow l/min.	Max power req. kW	Weight kg
MG14	259	5	180	540	1400	18	50

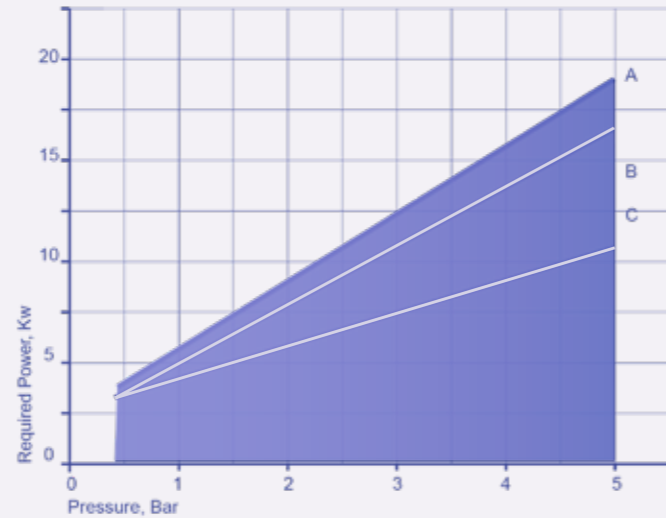
Performance curves

Flow/Pressure curve

A= 540 R.p.m; B=450 R.p.m; C=225 R.p.m;



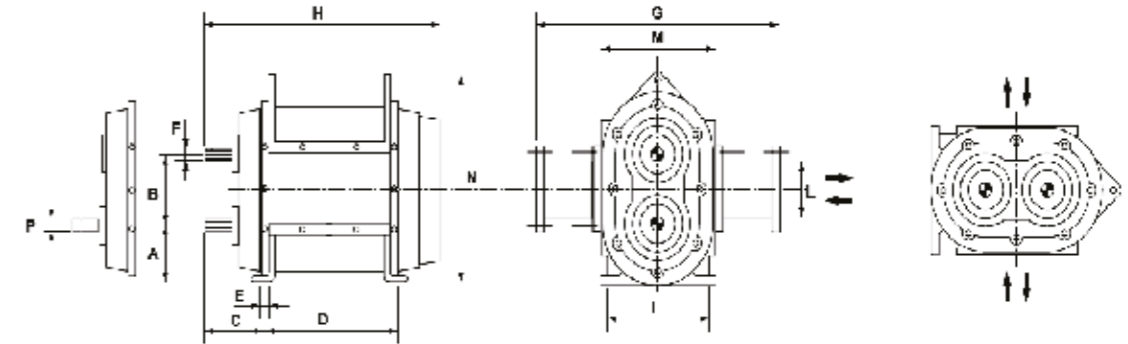
Power/pressure curves



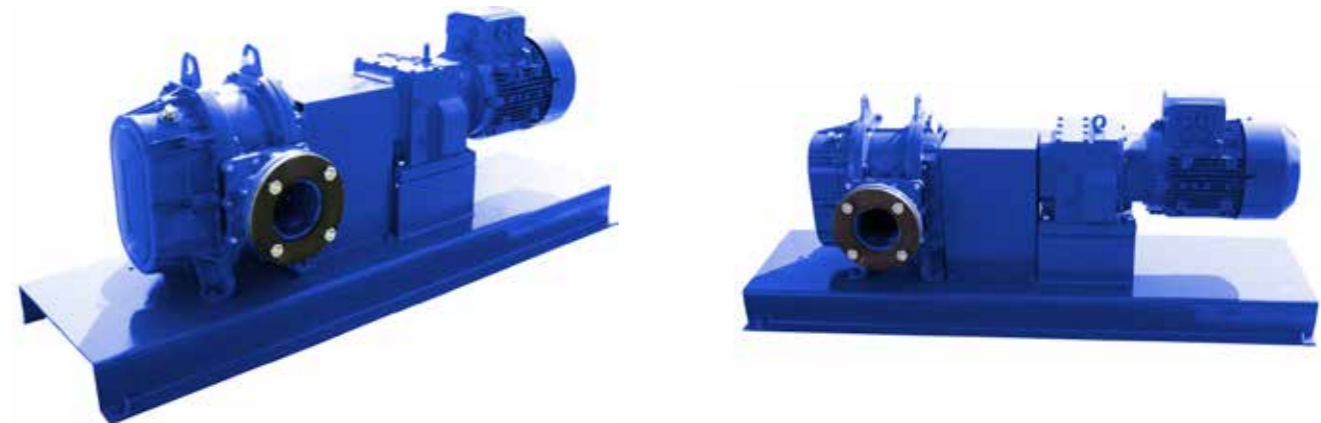
Continuous use Intermittent use Occasional use

Dimensions

Fig 1



Mod	A	B	C	D	E	F	G	H	I	L	M	N	P	Starting	Max.	Max.	Mini	Max.	Total
														Torque	pressure	Power	Speed	Speed	
mm														Nm	Bar	Bar	R.p.m	R.p.m	KG
MG14	135	140	135	223	14	ASA E 1 1/2 DIN 9611A	510	470	230	DN100	274	463	35g6	120-140	5	20	180	540	105



An overview of Emeg's ever-growing inventory of valves, strainers, solenoids, actuators and gauges.



**EMV 54
PN32 Brass Ball Valve**

Features:

- Screwed BSP parallel (ISO 228/1)
- Anti-blow-out stem
- PTFE seat
- Full bore
- WRAS approved



**EMV 89
PN25 Brass Ball Valve**

Features:

- Compression ends
- Anti-blow-out stem
- PTFE seats & seals
- Full bore
- WRAS & EN331 approved
- Locking lever & tee handle options available



**EMV 40P
PN40 Brass Ball Valve**

Features:

- Screwed BSP parallel (ISO 228/1)
- Anti-blowout stem
- PTFE seats & seals
- Full bore
- WRAS & EN331 approved
- Locking lever (1/2" to 2" only) & tee
- Handle (1/4" to 1" only) options available



**ART 40T
PN40 DZR Brass Ball Valve**

Features:

- Screwed BSP taper ends (ISO 7/1) or NPT (ANSI B1.20.1)
- Anti-blow-out stem
- PTFE seats & seals
- Full bore
- WRAS approved



**EMV 59
PN25 DZR Brass Ball Valve**

Features:

- Compression ends (BS EN 1254-2 (1998))
- Anti-blow-out stem
- PTFE seats & seals
- Full bore
- WRAS approved



**EMV 279
Ductile Iron Ball Valve Flanged Ends**

Features:

- Flange mounting PN16 only
- ISO 5211 direct mount
- Inside and outside epoxy coating
- Optional lockable Lever
- Blow out proof stem
- Chrome plated brass ball



**EMV 902T
PN82 Stainless Steel 2 Piece Ball Valve**

Features:

- BSP taper (ISO 7/1)
- RPTFE (15%) seats
- PTFE seals
- Full bore
- PN82 rated
- Locking device
- Tee handles available for 1/4", 3/8" and 1/2"



**EMV 135 PN16
Ductile Iron Butterfly Valve Lugged
& Tapped Type**

Features:

- Flange mounting PN16 only
- BS5155 (BS EN 593)
- ISO 5211 direct mount
- Lockable dandle
- Epoxy coat finish
- WRAS approved
- MSS-SP-67



**EMV 368
PN20 Bronze 'Y' Type Strainer**

Features:

- Available in screwed BSP taper (ISO 7/1) or NPT (ANSI B1.20.1)
- Bronze body
- Screwed cap
- PN20 rated
- WRAS approved



**EMV 135GB PN16
PN16 Ductile Iron Butterfly Valve Lugged
& Tapped Type**

Features:

- Flange mounting PN16 only
- BS5155 (BS EN 593)
- ISO 5211 direct mount
- Epoxy coat finish
- WRAS approved
- MSS-SP-67



**EMV 68
PN20 Brass 'Y' Strainer**

Features:

- Screwed BSP parallel (ISO 228/1)
- Brass body
- Stainless steel mesh



**EMV 135GB PN16 DN350-600
PN16 Ductile Iron Butterfly Valve Lugged
& Tapped Type**

Features:

- Flange mounting PN16 only
- BS5155 (BS EN 593)
- ISO 5211 direct mount
- Epoxy coat finish
- MSS-SP-67



**EMV 185
PN16 Cast Iron 'Y' Strainer**

Features:

- Flange mounting PN16 only
- Flange conforms to BS EN1092 PN16
- BS EN 558-1 series 1
- DN50 & DN65 square drain port
- DN80 - DN600 circular drain port



**EMV 145
Ductile Iron Butterfly Valve Lugged
& Tapped Type**

Features:

- Flange mounting PN16 only
- BS5155 (BS EN 593)
- ISO 5211 direct mount
- Lockable handle
- Epoxy coat finish
- 8", 10" and 12" come with gearbox as standard



**EMV 84M
PN20 Brass Swing Check Valve**

Features:

- Screwed BSP parallel (ISO 228/1)
- Brass body
- Metal seat



**EMV 170 PN16
PN16 Cast Iron Swing Check Valve**

Features:

- ◆ Flange mounting PN16 only
- ◆ Flange conforms to BS EN1092 PN16
- ◆ BS5153 (BS EN 558-1 Series 10)



**EMV 172
PN16 Ductile Iron Ball Check Valve**

Features:

- ◆ Flanged mounting PN16 only
- ◆ Valve design according to EN12334
- ◆ DIN3202 face-to-face
- ◆ Epoxy coat finish



**EMV 36
DZR Brass Double Check Valve BSP
Parallel F/F Ends**

Features:

- ◆ Screwed BSP parallel (ISO 228/1)
- ◆ WRAS approved
- ◆ Conforms with EN13959
- ◆ Prevention of back flow and back syphonage contamination



**EMV 37
DZR Brass Double Check Valve Com-
pression Ends**

Features:

- ◆ Compression ends
- ◆ WRAS approved
- ◆ Conforms with EN13959
- ◆ Prevention of back flow and back syphonage contamination



**EMV 310
Bronze Drain Cock**

Features:

- ◆ Screwed male BSP taper (ISO 7/1)
- ◆ BS 2879/2 type A
- ◆ Hose connection outlet
- ◆ WRAS approved



**EMV 1300
Bronze Air Release Valve**

Features:

- ◆ Screwed BSP parallel (ISO 228/1)
- ◆ Fitted with O-Ring seal



**EMV 642
Gunmetal Safety Valve**

Features:

- ◆ Screwed BSP parallel (ISO 228)
- ◆ Body gunmetal
- ◆ Suitable for gases and liquids
- ◆ Fitted with diaphragm to protect spring housing
- ◆ Set range 0.5 to 16 bar
- ◆ WRAS approved
- ◆ ISO 4126-1, PED 2014/68/EU
- ◆ Marine approvals - GL, DNV
- ◆ ATEX approval available at extra cost
- ◆ 5 year warranty
- ◆ Test certificate to EN10204-3.1 available on request



**EMV 670 M
Pressure Reducing Valve with gauge**

Features:

- ◆ Controls static and dynamic pressure
- ◆ Conforms to BS EN 1567
- ◆ Easy to service high temperature cartridge
- ◆ AISI 304 stainless steel cartridge filter
- ◆ Supplied with a pressure gauge
- ◆ WRAS approved
- ◆ 1" to 2" BSP parallel male ends (ISO 228/1)



EMV 22 DZR Fixed Orifice Double Regulating Valve (FODRV)

Features:

- BSP Parallel (ISO 228/1)
- Handwheel with shut off function and clear 360° reading
- Digital scale with lock function
- Fixed orifice with $\pm 5\%$ flow measurement accuracy
- Conforms to BS 7350 / BS 5154
- WRAS approved



EMV 255 Flanged Fixed Orifice Double Regulating Valve (FODRV)

Features:

- Flanged PN16
- Position indicator
- Fixed orifice with $\pm 5\%$ flow measurement accuracy
- Supplied with 2 fitted test points
- Extensions are included but not fitted



EMV 33SV Thermostatic Mixing Valve (TMV)

Features:

- Cold water supply temperature: 5°C - 25°C
- Hot water supply temperature: 55°C - 65°C
- Temperature adjustment range: 30°C - 48°C
- Factory set thermostatic controller: 42°C $\pm 0.2^\circ\text{C}$
- Accuracy of outlet temperature: $\pm 2^\circ\text{C}$
- Min. temperature differential: 12°C (between hot supply and outlet temp)
- Supply pressure imbalance dynamic: 2:1
- Flow rate minimum: 5 Litres/min
- DZR brass body
- WRAS approved
- Certified to TMV2 and TMV3



HQ8 - HQ120 HQ Electric Actuator for Emeg Ball & Butterfly Valves

Features:

- Wide range of output torques
- Alloy gearing
- Control options include 4-20ma positioner and failsafe
- Die cast aluminium housing
- Multi voltage options



Namur Solenoid Universal Direct Mount Namur Solenoid

Features:

- Life cycle 12,000,000 operations
5/2 - 3/2 Interchangeable
- Available in 110VAC, 230VAC, 24VAC, 24VDC
- IP65
- Manual over-ride control



EMV SB Switchbox

Features:

- Powder coated aluminium switchbox to IP67
- Solid & compact design with high visibility beacon indicator
- Captive cover bolts are safely retained during installation and maintenance
- Easily adjustable with no tools required
- Dual cable entries are provided
- Mounted to the actuator using a NAMUR standard stainless steel mounting bracket
- Switchboxes available to suit hazardous areas



HP Pneumatic Actuator HP Pneumatic Actuator for Emeg Ball & Butterfly Valves

Features:

- Double acting & spring return models
- Hard anodised aluminium housing
- Wide range of torque & control options available



SLP Series

- Available in 230VAC, 110VAC
12VDC, 24VDC, 24VAC
- Thread standard: ISO 228/1
- Coil rating - IP 65
- Coil duty cycle - 100%

100mm 'ECO' Range for HVAC Black & Chrome



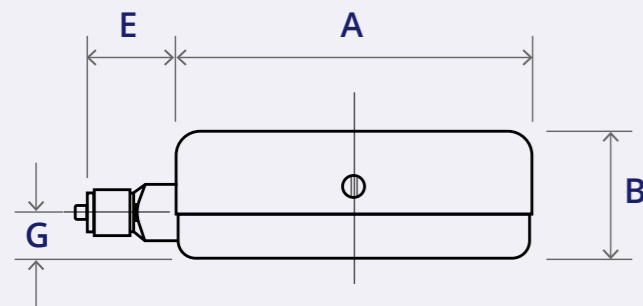
Diameter	100mm
Sensor	Bourdon tube
Wetted materials	Brass
Mounting style	Direct mounting bottom entry
Case material	Powder coated steel – black
Bezel material	Chrome plated
Connection	½" BSP male
Window	Glass
Scale	Bar and PSI
Accuracy	Class 1.0
Standard	EN 837-1
Features	Blow-out disc
Application	Any gaseous or liquid pressure medium not aggressive to brass/bronze.

Ranges	Pressure											Vacuum
Bar	1	2	2.5	4	6	7	10	14	16	21	25	-1
PSI	15	30	36	60	90	100	150	200	230	300	360	30"Hg

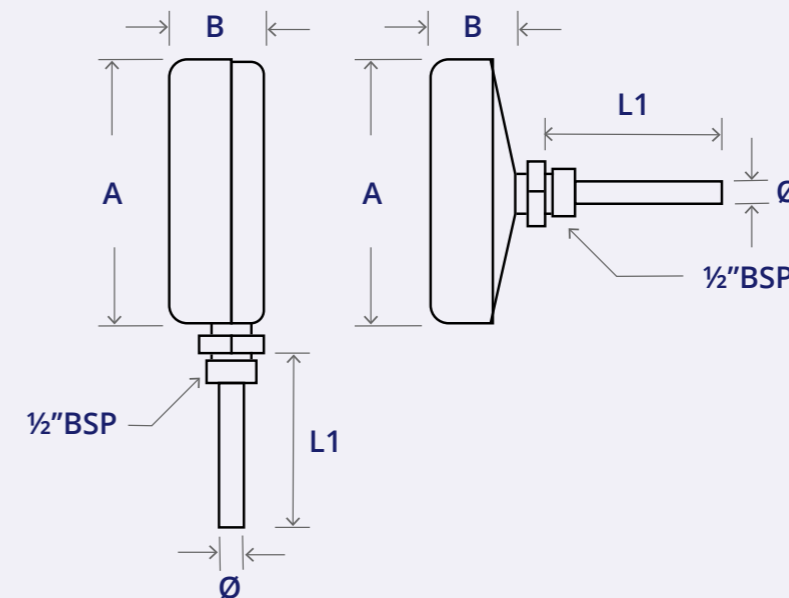
100mm 'ECO' Bimetal Thermometers for HVAC



Diameter	100mm
Sensor	Bimetal coil
Pocket	Solid drilled brass 12mm dia. 60 or 100mm under hex
Mounting style	Direct mounting bottom and centre back entry
Case material	Powder coated steel – black
Bezel material	Chromium plated
Connection	½" BSP male
Window	Glass
Scale	°C & °F
Accuracy	Class 1.0
Standard	DIN 16203
Features	Stainless steel pocket available
Standard ranges	-30+50°C&F, 0+120°C&F, 0+250°C&F



Dimension	mm
A	100
B	35
E	24
G	13



Dimension	mm
A	110
B (vertical)	48
B (co-axial)	26
Ø	12
L1	60 or 100



Proud to Partner with Crous Chemicals

Paint renovation in just 36 hours

We offer a cost-efficient paint refurbishment service for the interior and exterior of your vehicles. Vehicles refurbished by Crous Rail Service are ready for use again within 36 hours and increase the profitability of your rail vehicles considerably.



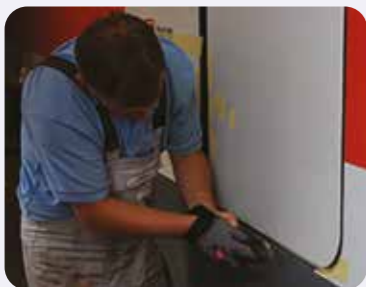
Step 1: Prewash - Graffiti cleaning with Graffiti Killer.



Step 2: Intensive cleaning with Transolv.



Step 3: Removal of the old pictograms.



Step 4: Painting preparation and removing corrosion.



Step 5: Filling of paint chips with special 2k polyester filler.



Step 6: Sanding down.



Step 7: Masking off the areas to be painted.



Step 8: Painting with 2k paint.



Step 9: Spot repairs of paint damage.



Step 10: Applying new pictograms.



Step 11: Preparing the old surfaces for the permanent coating.



Step 12: Applying the permanent coating - Permaseal TP.



Step 13: After 6 hours' drying time, the vehicle is ready for service.



Step 14: Paint renovation completed within 36 hours.



Graffiti Removal | Cleaning Agents | Protection



Intensive Heavy-Duty Cleaning

For fleet cleaning and maintenance, we highly recommend our professional, mobile heavy-duty cleaning team for the following:

- Cockpit maintenance
- Vehicle cleaning (interior and exterior)
- Intensive floor cleaning and polishing
- Air conditioner channel cleaning
- Window cleaning (interior and exterior)
- Upholstery shampooing
- Carpet care
- Odour removal
- Disinfecting

Scratch-Free Glass Protection Film

Replacing glass panes is costly and often scratches and acid burns in glassing are not repairable. Emeg has partnered with Crous Rail Service to offer a cost-effective special procedure which completely eliminates the deepest scratches and acid burns.

We provide two types of anti-scratch foil:

- Clear foil
- Laminated heat protection foil for glass panes

The process is quick and cost-effective

Step 1: Damaged areas on glass panes are marked. The damaged glass does not have to be removed.

Step 2: With a two-stage application method, damaged areas are polished to remove scratches or acid burns.

Step 3: Protective foil is applied.

Step 4: After 8 hours of drying time the glass becomes visibly clear.

Protective Foil Products:

SFG150µm EASY RELEASE FOIL

SFG175µm EASY RELEASE HEAT PROTECTION

The film protects against new scratches and acid burns, and can be replaced quickly and easily.



Graffiti Removal

Our mobile Graffiti Clean team are on hand 24 hours a day to remove any unwanted graffiti.

The process is quick and cost-effective

Step 1: Apply Crous Graffiti Remover.

Step 2: For acrylic graffiti and tar or bitumen, wait 30-90 seconds for product to dissolve.

Step 3: Synthetic graffiti will take up to 30min per m².

Step 4: Scrub with 3M pad.

Step 5: Wipe down with Transolv Protein pH11.

Step 6: Wipe down with Mag Blue Pro.

Step 7: Apply AR-Top and wait for 3 minutes.

Step 8: Wipe down with Mag Blue Pro.



Trains & Underground Carriages



Graffiti Killer ECO Liquid

Graffiti Killer ECO Gel

Features:

- Biodegradable Swiss-quality product made in Germany
- Removes all known acrylic and synthetic based graffiti spray paint
- Removes from 1k & 2k painted or protected surfaces
- Contains no heavy metals or phenols
- Consists of water-soluble solvents
- Free from methanol, VOCs, NMP and NEP



Graffiti Killer Liquid 20

Graffiti Killer Gel 20

Features:

- Biodegradable Swiss-quality product made in Germany
- Removes all known acrylic and synthetic based graffiti spray paint
- Removes from 1k & 2k painted or protected surfaces
- Contains no heavy metals or phenols
- Consists of water-soluble solvents
- Free from methanol, VOCs, NMP and NEP



Tar & Bitumen Remover

Features:

- Specially developed in Switzerland, made in Germany
- Removal of problematic graffiti e.g. tar, bitumen spray and all petroleum based graffiti
- Problematic graffiti mediums are distinguished by their outlines and their black/brown colour, petroleum-based graffiti can differ in colours e.g. white, silver and gold



Wall Paint Remover

Features:

- Specially developed Swiss product, made in Germany
- Removal of water based exterior wall paints
- These problematic graffiti mediums are distinguished by their large splatter appearance e.g. balloon-bombing



Elite 007

Features:

- Removal of graffiti from sensitive and delicate surfaces such as interior linings, GFK, synthetic materials, PVC and acrylic glass
- Developed to remove all graffiti, tags, permanent marker (edding), as well as glue residues and chewing gum on fabric seats



Elite Paste

Features:

- Specially developed Swiss product, made in Switzerland
- Removes stubborn shadows left behind after cleaning
- This product has the advantage of not dulling the surface
- Not to be used on acrylic glass, fabrics and carpet floors



Fast Cleaner

Features:

- Swiss-quality product made in Germany
- This high-speed cleaner has been specifically developed for exterior finishes and acrylic glass
- Remove all known graffiti, tags, permanent marker (edding), as well as glue residues
- No rinsing required

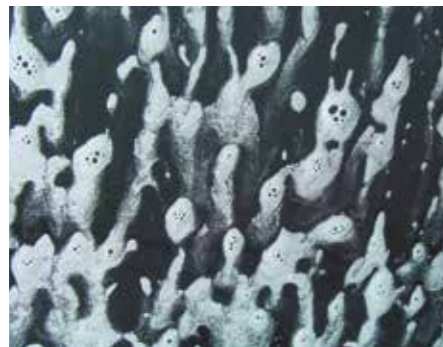
Trains & Underground Carriages



Graffiti Killer Cargo

Features:

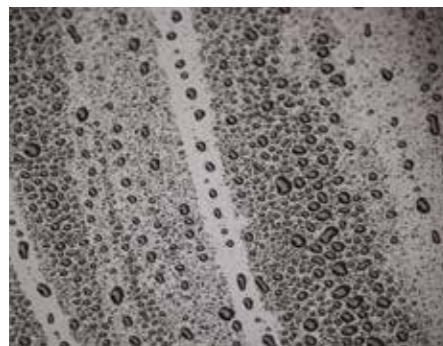
- Specially designed to remove all types of graffiti from untreated surfaces, such as aluminium and stainless steel
- 90% biodegradable, free of solvents and phosphates
- Non-flammable and dissolves in water
- Works on wet surfaces



Transolv

Features:

- Highly effective alkaline cleaner developed in South Africa, made in Germany
- Removal of very tough dirt from surfaces e.g. grease, brake dust, rust and atmospheric dirt
- Contains no acid, sodium hydroxide, phosphates or ammonia
- No rust on metals (including aluminium)
- Environmentally friendly, biodegradable and non-flammable
- Neutralise surfaces, dilute TRANSOLV 1:100 with water after graffiti removal



Seal-UV - Non-Permanent

Features:

- Top-quality preservation product
Restores treated surfaces to original condition and protects against UV-A & B
- Cleanability is significantly increased as pores are closed so bleaching is prevented
- Creates a separation layer so graffiti and dirt can no longer penetrate the surface
- Contains no solvent, teflon, wax or silicone
- Thermoplastic coating protects the surface from cold (to -30°C) & heat (up to +90°C)
- The penetration of brake dust, rust and insects is prevented
- Shelf life of 2 years



Permaseal TP - Permanent (Gloss/Matt)

Features:

- Permanent anti-graffiti coating for non-absorbing 2-component painted surfaces
- Prevent any adhesion of spray paints and similar impurities
- Contains an inorganic polymer which is chemically bonded to the lacquer surface and reacts with the moisture in the air to form a glossy surface
- Has an excellent adhesion, high-chemical, UV and weather resistance (>4,000 hours according to ASTM G 154)
- Thickness of the cured protective layer is undetectable $\leq 5\mu\text{m}$ to $\leq 8\mu\text{m}$



Permaseal 37 Permanent (Matt)

Features:

- Permanent anti-graffiti coating for stainless steel and aluminium surfaces
- Prevent any adhesion of spray paints and similar impurities
- Contains an inorganic polymer which is chemically bonded to the lacquer surface and reacts with the moisture in the air to form a matt surface
- Permaseal 37: excellent adhesion
- High resistance to chemicals
- Provides a high UV and weather resistance (>4,000 hours according to ASTM G 154)
- Cured protective layer is undetectable $\leq 5\mu\text{m}$



Wall Paint Killer

Features:

- For treated, coated and painted surfaces: exposed concrete, natural stone, metal, windows, etc
- Removes all types of emulsion paint from the above-mentioned surfaces
- Organic substances in the product are biodegradable (OECD test)
- Contains no heavy metals or phenols
- Consists of water-soluble solvents

Depots | Stations | Office Buildings



Graffiti Killer ECO Liquid

Graffiti Killer ECO Gel

Features:

- Swiss quality product
- Removes any kind of known graffiti, such as acrylic and synthetic resin spray of painted and sealed surfaces
- Contains no heavy metals nor phenols
- Consists of water-soluble solvents
- VOCs, NMP and NEP-free



Elite 007

Features:

- For treated, coated and lacquered surfaces especially for indoor use
- Developed for sensitive surfaces such as interior cladding GRP, plastics, PVC and plexiglass
- Ideal for removing all known graffiti, tags, waterproof pens (edding), as well as adhesive residue and chewing gum on fabric seats



Elite 007 Paste

Features:

- For treated, coated and lacquered surfaces especially for indoor use
- Developed to complement Elite 007
- Removes leftover shadows on the already treated interior cladding in the building or on other surfaces. In particular, stubborn shadows from waterproof pencils (edding)
- Not for plexiglass, fabric seats, etc
- Suitable for carpets



Quick Cleaner (Waterless)

Features:

- For treated, coated and lacquered surfaces especially for indoor use
- Developed for sensitive surfaces such as interior cladding GRP, plastics, PVC and plexiglass
- Removing of all known graffiti, tags, waterproof pens (edding), as well as adhesive residue and chewing gum on fabric seats



Abrasive-S

Features:

- For non-treated, non-coated, porous surfaces
- Developed to remove all types of graffiti from untreated surfaces
- At least 90% biodegradable
- Free of solvents and phosphates
- Non-flammable and dissolves in water
- Works on wet surfaces



Shadow Remover

Features:

- For untreated surfaces
- Fair-faced and washed concrete, natural stone
- Caution acid-based product
- If there are still shadows (no paint residues) after the graffiti removal with Abrasive-S, the shadow remover removes them without leaving any residue



2-Component PU Top Coat - Permanent

Features:

- Permanent surface protection
- Reduces dirt adhesion and makes subsequent maintenance easier
- Removed easily and conveniently, without repeating a coat of paint or re-applying an anti-graffiti protective layer
- Any kind of pollution (e.g. exhaust gases) no longer penetrates the porous surfaces and can be cleaned easily
- Water-based and can be diluted with water
- Contains no solvents
- 2k PU contains modern UV stabilisers and is characterised by high adhesive strength
- Water vapour diffusion ability, breathability, good solvent and chemical resistance, high hardness and good elasticity

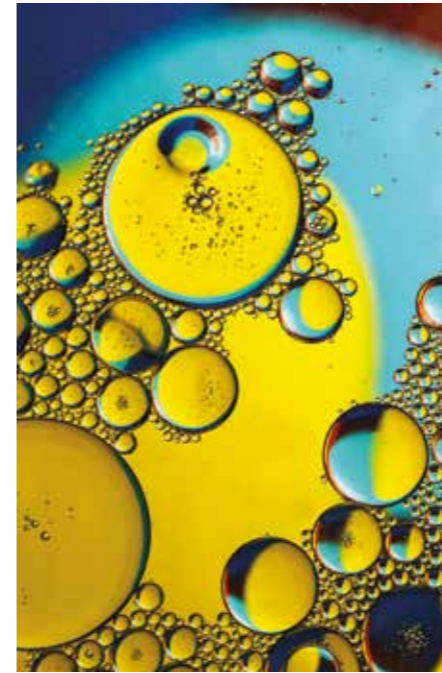
Depots | Stations | Office Buildings



Transolv

Features:

- Highly effective alkaline cleaner for very strong and extremely dirty surfaces
- Especially for the removal of brake dust dirt and organic deposits such as rust, oil, grease, etc
- Replaces acid-based cleaning products and is water-soluble
- Contains no acids, sodium hydroxide, phosphates or ammonia
- Does not rust on metals (including aluminum)
- Environmentally friendly, biodegradable and non-flammable



NANO-Sil - Non-Permanent

Features:

- For porous facade surfaces
- Natural stone, limestone, washing and exposed concrete, brick and plastering
- Water-based, non-permanent long-term protective impregnation from the field of nanotechnology
- In diluted form, it is used for the water and oil repellent treatment of inorganic substances such as mineral building materials
- Achieves an oleo-phobic (oil-repellent) effect
- Pores of the building material remain open. Water vapour diffusion is not or hardly influenced
- Protected surface remains breathable
- Protects against unwanted general deposits from the environment and exhaust gases
- Facilitates facade maintenance by self-cleaning with rainwater



Primer WB 100 for 2-Component

Features:

- Deep primer for porous finishes: exposed concrete, cement and mineral plaster
- Vapour diffusible, transparent primer and prevents discoloration of the building material surface
- Water-thinnable on a micro-acrylic dispersion basis and suitable for all mineral substrates (inside and outside)
- Low-odour, solvent-free and environmentally friendly
- Impregnates and protects against moisture penetration, prevents blooming damage, deposits and clouds
- Solidifies sandy, weathered building material surfaces as well as residues of lime and mineral paints
- Equalises substrates with strong or different levels of absorption





Proud to Partner with Crous LED

We supply custom-made lighting to the customer's exact specifications.



CLED Panel

Features:

- Easy installation in grid ceiling
- Can be used anywhere when suspended
- Glare-free
- Modern design
- Available for all standard dimensions



CLED Hibay

Features:

- Rail stations
- Washing facilities
- Track systems
- Warehouses
- Garages



CLED Modular Flood Light

Features:

- Rail stations
- Washing facilities
- Track systems
- Warehouses
- Garages



Y in the Model	Y=01	Y=02	Y=03
Beam Angle	60°	90°	100°x125°
Light Distribution			



CLED Linear Light

Features:

- Rail stations
- Washing facilities
- Track systems
- Warehouses
- Garages



Diagram of the luminous intensity distribution	V-Type	Wattage	Lumens
<p>Average Beam Angle (50%): 125.1 DEG</p>	Clear (130lm/W)	11W	1430lm
		18W	2340lm
		22W	2860lm
	Frosted (110lm/W)	11W	1080lm
		18W	1980lm
		22W	110200lm

Diagram of the luminous intensity distribution	P-Type	Wattage	Lumens
<p>Average Beam Angle (50%): 125.1 DEG</p>	Clear (130lm/W)	11W	1430lm
		18W	2340lm
		22W	2860lm
	Frosted (110lm/W)	11W	1080lm
		18W	1980lm
		22W	110200lm

Diagram of the luminous intensity distribution	D-Type	Wattage	Lumens
<p>Average Beam Angle (50%): 204.2 DEG</p>	Clear (130lm/W)	11W	1430lm
		18W	2340lm
		22W	2860lm
	Frosted (110lm/W)	11W	1080lm
		18W	1980lm
		22W	110200lm
	Clear (130lm/W)	11W	1430lm
		18W	2340lm
		22W	2860lm



CLED Train Tubes

Features:

- ◆ 40% energy savings without flickering
- ◆ Railway-friendly
- ◆ Easy installation
- ◆ 100% maintenance-free
- ◆ Lifetime 7-11 years
- ◆ L90 B10 C2
- ◆ 50,000 hours
- ◆ MTBF 320 years
- ◆ 5-year warranty
- ◆ 130 lm / watt chips
- ◆ SDCM 3/5
- ◆ Chips 2835/ 3030
- ◆ Rotating end caps

Options Include:

T5 LED-Tube	T8 LED-Tube	T8 LED-Tube with T5 end		
P-Type 160°	V-Type 200°	D-Type 320°		
24VdC	36VdC	72VdC	110VdC	250AC



Case Study Kirkdale Depot

Location
Merseyside, North West England

Client
BAM Construction for Stadler/Mersey Travel

Project Overview

A new service, maintenance and carriage wash machine (CWM) facility was needed at the Kirkdale depot to stable the new rail fleet being produced by Stadler Service AG.

The buildings were designed to accommodate 65m vehicles comprising 4 carriages and would consist of 3 main areas; the existing wheel lathe building (circa 1305m²), a new maintenance hall (circa 1360m²) and a new 2-storey accommodation building (circa 2000m²), which would include offices, meeting rooms, storage, workshops, changing rooms & showers, switch room and plant room.

Key project features

- Bespoke DPS tailored to the depot facility
- No need to amend operating procedures and practices
- Automatic, one-pass, drive-through CWM
- CWM achieves 75% SOAP efficiency
- CWM nightly throughput = 124 carriages
- Comprehensive mechanical & electrical services



Products & Services

- safeNet Depot Protection System (DPS)
- eWash – carriage wash machine
- New underframe wash pit
- Internal, emergency & external lighting
- Lightning & fire protection
- Data, telecoms & security
- Heating & ventilation
- Water supply & drainage
- General power & LV distribution/earthing
- Building Energy Management System (BEMS)



Case Study Wigan Springs Branch Depot

Location
Greater Manchester, North West England

Client
Network Rail for Volker Rail Group

Project Overview

As a result of the implementation of major railway projects in the North West, rolling stock deployment will change significantly. Emeg were contracted to assist with the construction of a new train maintenance depot, including carriage wash machine (CWM), controlled emission toilet (CET) systems, fuelling and sanding services, to enable Network Rail to service new and existing rolling stock.

The Wigan Springs Branch Depot site consists of the Wigan Springs branch sidings and the Bickershaw Colliery Line headshunt, which are situated either side of an operational DB Cargo depot.

Key project features

- New CET with 25,000-litre water tank and hot & cold water system
- New CWM with 36,000-litre water tank
- Pre-wet, detergent, water wash & final rinse sides
- Plant rooms for CET, CWM, fuel & sand systems
- Eco-friendly water recycling system
- New eMix system with 50,000-litre fuel tank



Products & Services

- eVac – Controlled Emission Toilet (CET) system
- eWash – Carriage Wash Machine (CWM)
- eMix – fuel, oil, AdBlue & coolant delivery system
- Automatic sanding system
- Double vacuum pump set
- CWM booster pumps
- Air compressor
- Mechanical & electrical services
- Internal and Remote Control Panels (RCP)



Case Study Plymouth Laira TMD

Location
Devon, South West England

Client
Network Rail/Great Western Railway

Project Overview

Laira TMD is operated by Great Western Railway (GWR) and is mainly concerned with the overhaul and daily servicing of their fleet of high-speed trains as well as DMUs.

As principal contractor, Emeg guided the client through the principles of depot servicing design. Following site surveys, data logging, load studies and coordination with end users, we used our lessons-learned approach to deliver a fully cohesive and site-specific design to allow maintenance activities in support of AT300 introduction.

Key project features

- Design, install & commissioning on live depot
- 3D models for review and discussion
- Adherence to NWR's Engineering Management Plan
- Modifications to existing shore supply systems
- Extension of existing fuelling systems
- Relocation of existing exhaust extraction systems



Case Study Howdon Satellite Depot

Location
North Tyneside, North East England

Client
Buckingham Group Contracting for Nexus

Project Overview

With the existing Nexus Metro depot at Gosforth undergoing redevelopment works, with an expanded fleet of vehicles, Howdon was needed as an additional depot facility where vehicles could be stabled overnight and new rolling stock received. It also needed to provide cleaning and light maintenance facilities.

Emeg were responsible for undertaking the detailed design, installation and coordination of the mechanical and electrical installations to create a suitable environment within the depot sidings, workshop and office.

Key project features

- Preferred M&E service provider
- Dedicated on-site project management
- Innovative bespoke solutions
- Delivered on time & on budget
- Health & Safety top priority
- No on-site accidents

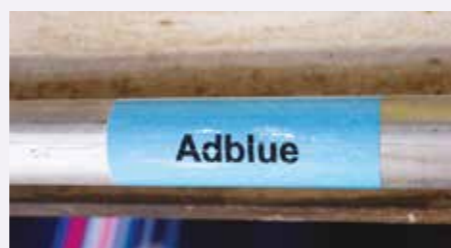
Products & Services

- eVac – Controlled Emission Toilets (CET)
- New CET & eMix plant room
- Vacuum and water booster pump sets
- Apron hot & cold water points
- eMix – fuel, engine oil, hydraulic oil, coolant & AdBlue fuel additive
- AdBlue 30,000-litre storage tank
- Fuel pipe fabrication & welding
- eShore – sidings shore supply system
- Mechanical & electrical services
- Cable management



Products & Services

- safeNet Depot Protection System (DPS)
- Points heating
- Automatic derailer
- Mechanical & electrical services
- LV distribution & earthing
- Lighting, telecoms & fire protection
- Gas & water supply
- Ventilation & drainage
- Heating & cooling
- Building Management System (BMS)



"It's been a collaborative effort, delivered on time, and we've produced something we can all really be proud of."

Tabitha Callaghan
PROJECT MANAGER, NEXUS

Case Study Cardiff Canton ROC

Location
Cardiff, Wales

Client
Network Rail/Transport for Wales

Project Overview

Cardiff Canton Rail Operating Centre (ROC) is operated by Transport for Wales and is mainly concerned with the maintenance and daily servicing of its fleet of diesel engines.

Emeg worked directly with Network Rail/Transport for Wales to upgrade the heating system, thus improving thermal comfort conditions for rail operatives, and improve the extraction of diesel fumes through effective ventilation to reduce contaminants and improve air quality. Our design included all associated containment and electrical distribution systems.

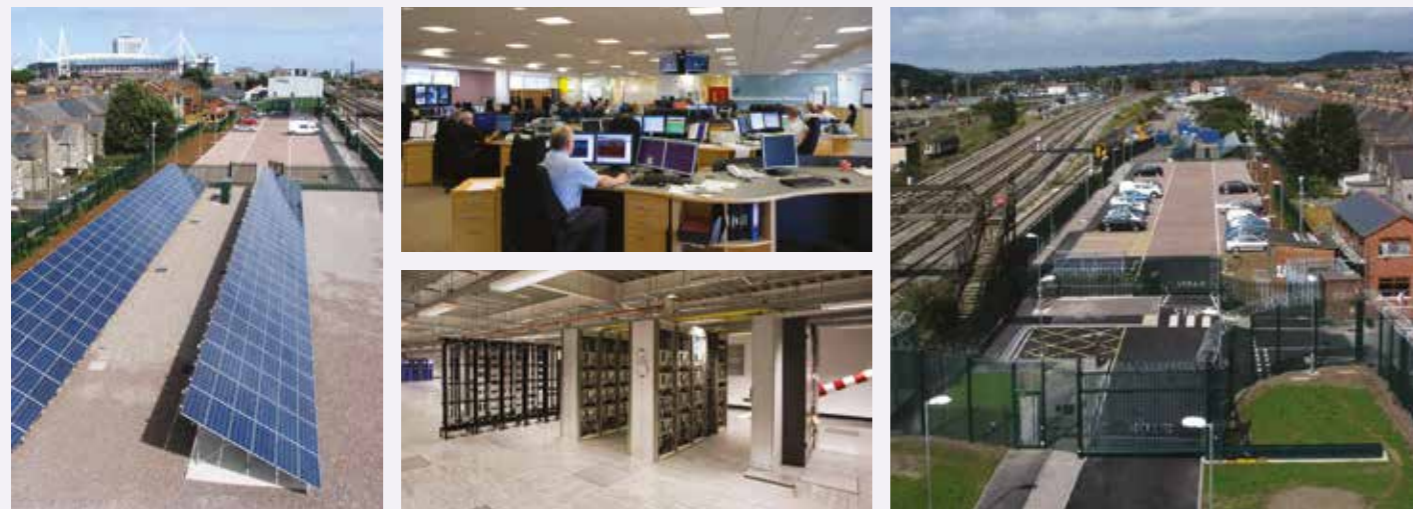
Key project features

- Review of existing electrical infrastructure
- Modification of existing distribution network
- Refurb/replace existing supply fans
- Removal of old radiant heating system
- Installation of gas-fired heating system
- Structural modifications to existing building



Products & Services

- eFume – fume extraction system
- Radiant heating system
- Electrical load monitoring
- Fresh air make-up ventilation
- Structural evaluation



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