

A Tradition of Rail Excellence

Product Catalogue

12:3611



50 YEARS OF RAIL EXPERTISE



AN UNRIVALLED SAFETY RECORD



100% FOCUSED ON THE RAIL INDUSTRY

www.emeg.co.uk

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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 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 History

Emeg was founded in 1997 by Richard Simmonite, a time-served electrical engineer with over 50 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.







MORGAN

SINDALL

ORO

First 6 Great Western

BOMBARDIER

AECOM

Our Depot Services

Protection



Design





MEP



Rail Systems





Refurbishment





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.

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.















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 timeserved workforce, are fundamental to our past and continued success.

Our Group Structure





Enterprise Depot Integration Platform

depot connect

Our Group Structure



- **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
- Coolant Systems





United Kingdom

Chesterfield - Head Office

Emeg Group Ltd 3 Dunston Place, Dunston Road, Whittington Moor, Chesterfield, S41 8NL

T: +44 (0)1246 268678 **F:** +44 (0)1246 268679 E: sales@emeg.co.uk

Manufacturing & Distribution

Emeg Rail Systems Ltd Unit 2 Lockoford Trade Park, Lockoford Lane, Chesterfield, S41 7JL

Design Office

Emeg Design Services 5 Scholar Green Road, Stretford, Manchester, M32 0TR

T: +44 (0)161 8656208 E: enq@emeg.co.uk

International

Dubai Office

Emeg Rail Systems LLC Office 1905, Tameem House, Barsha Heights, Al Thanyah First, Dubai, UAE Makani No. 1619377211

T: +971 04 568 6798 E: sales@emegrailsystems.com

Abu Dhabi Office

Emeg General Trading LLC Office 906, Al Falah St, Al Danah, Abu Dhabi, UAE

T: +971 04 568 6798 E: sales@emegrailsystems.com



Headquarters

International Office

Design Office

M&D Centre

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 'onestopshop' 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 problemsolvers, 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

Maintenance Clients Include:









ARRIVA TrainCare



northern

- 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.



BOMBARDIER





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, costeffective 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-forconstruction 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





depotCONNECT®: Smart Rail Integration System



depotCONNECT®: Smart Rail Integration System



safeNet

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 derailers / 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.



depot CONNECT









REMOTE MONITORING

Features & Benefits

- Safety of the personnel 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 colourcoded 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 derailers. 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.











Mobile units

We also supply mobile toilet extraction systems

with vacuum pumps,

flexibility. The rinsing

of the train cisterns

can be included.

and subsequent refilling

which offer greater

Controlled Emission Toilet Extraction and Flushing System

meg

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.

Tree of A

depot CONNECT 14M



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.

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.





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

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.









e-vac[™]: Controlled Emission Toilet Extraction and Flushing 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.

depot connect



MAX TEMPERATURE





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.

> **Boom:** horizontal, adjustable arm connected to the fan box containing rigid and flexible ductwork sections and motion devices.

Extract hood: hood sized in accordance with HSG requirements, in order to efficiently capture the contaminant.

> Controller: hand-held pendant controller, containing boom and hood adjustment and fan activation buttons, and airflow indicator in line with HSG258 guidance.

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.

Patent pending: application number GB 2107335.8

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.



Exhaust duct: carrying high temperature fumes away from the work area, discharging air to atmosphere at a safe location.

> **Fan box:** containing a single inlet, single width centrifugal fan, rated to handle noxious gases/ fumes at very high temperatures in excess of 200°C.

Support mechanism: either a vertical column, or a wallmounted bracket depending on depot suitability.

Slide

The extract hood is positioned laterally along the boom, powered by an efficient, integral beltdriven 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, readyto-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









INTELLIGENT

REDUCE WATER CONSUMPTION 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.



Permanent carriage wash machine

Carriage wash machine in action

Cleaning System in Automatic Washing Machines

Our cleaning system is sustainable and resourcesaving, 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



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.





Temporary carriage wash machine



Proud to Partner with Crous Chemicals

Products and Services

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.









Graffiti Removal



Upholstery Cleaning

Sealing



Preservation



Basic Cleaning







HOCHBAHN













Head Office: +44 (0)1246 268 678

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Visit: www.emeg.co.uk

Emeg: In Partnership with Crous Chemicals Switzerland and LECM UK



Bodywork Repair





Industrial Painting





Glass Renovations





Glass Foiling

ALSTOM 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.



Glyco

• Hydrolic oil

Lubrication oil

Fluids used

- Adblue
- Coolant
- Fuel



depot CONNECT



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.

Performended Installation	Liquid Dolivory Voltage		Current	Dim	Weight		
Recommended Installation Delivery Rate (l/m)	Rate (l/m)	(V)	Draw	н	w	D	(kg)
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

AdBlue[®]

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.

Emeg[®] e-fuel™

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.

EMAF 850 / EMAF 650 Portable air purifiers.

EMAF 420 / EMAF 350 Portable air purifiers.





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.



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

devices are stored Workshops and areas where cutting, publishing or welding work

is undertaken

Security offices

Data centres

Model	Filters	Filtration capacity
EMAF 420 H 14P	F7+H14	Dust, pollen, spores,
EMAF 350 CA H14	F7 + active carbon + H14	Dust, pollen, spores, odours
EMAF 350 VOC H14	F7 + Filtro VOC + H14	Dust, pollen, spores, odours + formaldehy

Model	Clean filter flow rate (m³/h)	Dirty filter flow rate (m³/h)	Area treat	to * (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

Model		Filters	Filtration canacity		
Horizontal	Vertical	Filters	Filtration capacity		
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 $_{\rm 1},$ PM $_{\rm 2.5}$ y PM $_{\rm 10}) + odours$		
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		

Мо	del	Clean filter	Dirty filter	Area	a to	Sound level			Maximum
Horizontal	Vertical	flow rate flow rate t		treat* at maximum (m ²) speed (dB)			Power (W)	current absorbed (A)	
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



• Station circulation areas • Rack cupboards where electronic

, bacteria, viruses, fine particles in suspension (PM₁, PM_{2.5} y PM₁₀)

, bacteria, viruses, fine particles in suspension (PM₁, PM₂₅ y PM₁₀) +

, bacteria, viruses, fine particles in suspension (PM_1 , $PM_{2.5}$ y PM_{10}) + nyde, ethylene, CO, SO₂, NO_x, VOC

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	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 (m³/h)	Static pressure clean filters available (Pa)	Area to treat* (m²)	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	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	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.

F7 filter (included in heat ecovery unit) Gas filtration stage (fumes and gases) F9 particle filter

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_{10} , and PM_{11} , PM_{25} and PM_{10} particles.

UVF ECOWAT

Energy-efficient acoustically insulated ventilation units with integrated filters.

Capacity to assemble up to three filters. Filtration efficiency $ePM_{10} = 99.5\%$, $ePM_{25} = 98.5\%$, $ePM_{1} = 96.2\%$.





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.





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.

Combination	Filtration efficie	ency s/ISO-16890	
of filters	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%



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



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

Emed

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.

Depot Heating & Cooling Solutions

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.



Emeg

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





Model	Power	Flow Rate	Pipeline Pressure		Sta	Approximate		
Model	(kW)	(m³/h)	Size (mm)	Drop	А	В	с	Net Weight (kg)
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. Ancillary Range



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

Dimensions



[Mod	A	В	C	D	E	F	G	H	I	L	М	N	Р	Starting	Max.	Max.	Mini	Max.	Total
															Torque	pressure	Power	Speed	Speed	weight
[mm					mm			m	m		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



Performance curves



Ancillary Range





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



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

Features:

- PTFE seats & seals
- EMV 59 Features:

WRAS

Ø Ø

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Ø



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



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

PN25 DZR Brass Ball Valve

- 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%" and 1/2"







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

Features:

- Flange mounting PN16 only
- BS5155 (BS EN 593) ٥
- ISO 5211 direct mount Ø
- Lockable dandle Ø
- Epoxy coat finish Ø
- WRAS approved Ø
- MSS-SP-67

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

Features:

- Flange mounting PN16 only
- BS5155 (BS EN 593) Ø
- ISO 5211 direct mount Ø
- Ø Epoxy coat finish
- WRAS approved Ø
- MSS-SP-67 ۲

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

Features:

- Flange mounting PN16 only
- BS5155 (BS EN 593) ۲
- ISO 5211 direct mount Ø
- Epoxy coat finish Ø
- MSS-SP-67 ۲



EMV 368 PN20 Bronze 'Y' Type Strainer

- Screwed cap
- PN20 rated
- WRAS approved



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

Features:



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

Features:

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





Features:

- Available in screwed BSP taper (ISO 7/1) or
 - NPT (ANSI B1.20.1)
- Bronze body

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

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 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 1300 **Bronze Air Release Valve**

Features:



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

Features:

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



EMV 642





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

Features:

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



EMV 37

DZR Brass Double Check Valve Compression Ends

Features:

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



WRAS

Bronze Drain Cock

Features:

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

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

Gunmetal Safety Valve

- 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

Pressure Reducing Valve with gauge

- 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)
- Ø Handwheel with shut off function and clear 360° reading
- Digital scale with lock function ٥
- Fixed orifice with ± 5% flow measurement accuracy Ø
- Ø 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 ± 5% flow measurement accuracy Ø
- Supplied with 2 fitted test points Ø
- 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
- ٥ Temperature adjustment range: 30°C - 48°C
- Factory set thermostatic controller: 42°C 0/2°C Ø
- Accuracy of outlet temperature: ±2°C Ø
- Min. temperature differential: 12°C (between hot Ø supply and outlet temp)
- Supply pressure imbalance dynamic: 2:1 Ø
- Flow rate minimum: 5 Litres/min Ø
- DZR brass body Ø
- WRAS approved Ø
- Certified to TMV2 and TMV3



HQ8 - HQ120

HQ Electric Actuator for Emeg Ball & Butterfly Valves

Features:

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





EMV SB

- Ø
- - Features:





Namur Solenoid **Universal Direct Mount Namur Solenoid**

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

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

- 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 Ø
- 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	¾" 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







Dimension	mm
А	100
В	35
E	24
G	13



	100mm
	Bimetal coil
	Solid drilled brass 12mm dia. 60 or 100mm under hex
style	Direct mounting bottom and centre back entry
erial	Powder coated steel – black
terial	Chromium plated
on	½" BSP male
	Glass
	°C & °F
	Class 1.0
	DIN 16203
	Stainless steel pocket available
ranges	-30+50°C&F, 0+120°C&F, 0+250°C&F



Dimension	mm
А	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 7: Masking off the areas to be painted.

Step 8: Painting with 2k paint.



Step 1: Prewash - Graffiti cleaning with Graffiti Killer.



Step 2: Intensive cleaning with Transolv.



Step 3: Removal of the old pictograms.



Step 10: Applying new pictograms.



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



Step 4: Painting preparation and removing corrosion.



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



Step 6: Sanding down.



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



Step 14: Paint renovation completed within 36 hours.





Step 9: Spot repairs of paint damage.



Step 12: Applying the permanent coating - Permaseal TP.



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.













Head Office: +44 (0)1246 268 678

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Visit: www.emeg.co.uk

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 Ø
- Free from methanol, VOCs, NMP and NEP





- Ø
- These problematic graffiti mediums are distinguished by Ø their large splatter appearance e.g. balloon-bombing





Features:



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



Features:

CROUS CHEMICALS







Wall Paint Remover

- Specially developed Swiss product, made in Germany
 - Removal of water based exterior wall paints

Elite 007

- 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

 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

- 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)
- S Environmentally friendly, biodegradable and nonflammable
- Neutralise surfaces, dilute TRANSOLV 1:100 with water after graffiti removal



CROUS CHEMICALS

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











- Has an excellent adhesion, high-chemical, UV and weather resistance (>4,000 hours according to ASTM G 154)
- Features:
- Contains an inorganic polymer which is chemically bonded to the lacquer surface and reacts with the
- Provides a high UV and weather resistance (>4,000 hours according to ASTM G 154)





Permaseal TP - Permanent (Gloss/Matt)

- 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
- Thickness of the cured protective layer is undetectable ≤5µm to ≤8µm

Permaseal 37 Permanent (Matt)

- Permanent anti-graffiti coating for stainless steel and aluminium surfaces
- Prevent any adhesion of spray paints and similar impurities
 - moisture in the air to form a matt surface
- Permaseal 37: excellent adhesion
- High resistance to chemicals
- Cured protective layer is undetectable $\leq 5\mu m$

Wall Paint Killer

- 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 Ø
- 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







Features: Ø

Ø Ø

Ø

Ø

Ø



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











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2-Component PU Top Coat - Permanent

Features:

- Ø
- - Ø
 - Ø

Quick Cleaner (Waterless)

- 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

- 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

- 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 watersoluble
- Ocontains no acids, sodium hydroxide, phosphates or ammonia
- Does not rust on metals (including aluminum)
- Environmentally friendly, biodegradable and nonflammable







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



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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



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



Features:

- Rail stations Washing facilities
- Track systems
- Warehouses





CLED Hibay

Rail stations

Features:

- Washing facilities
- Track systems
- Warehouses
- Garages





CLED Linear Light Features:

- Rail stations Washing facilities • Track systems









CLED Modular Flood Light

- Garages





- Warehouses
- Garages





Diagram of the luminous intensity distribution	V-Туре	Wattage	Lumens
-/+180 150		11W	1430lm
-120 120	Clear (130lm/W)	18W	2340lm
-90 0 90		22W	2860lm
80		11W	1080lm
-60 240 60 UNIT:cd 220 C0/180,146.8deg	Frosted (110lm/W)	18W	1980lm
-30 400 30 C30/210,133.8deg C60/240,113.0deg AVERAGE BEAM ANGLE (50%) :125.1 DEG C90/270,106.9deg		22W	110200lm

Diagram of the luminous intensity distribution	Р-Туре	Wattage	Lumens
-/+180		11W	1430lm
-120	Clear (130lm/W)	18W	2340lm
		22W	2860lm
-90 0 90 160 320		11W	1080lm
-60 480 60 WHIT:cd 60 (0/180,123,3deg	Frosted (110lm/W)	18W	1980lm
-30 800 30 C30/210,118.5deg C60/240,110.4deg 0 C90/270,107.0deg		22W	110200lm







CLED Train Tubes

Features:

• 40% energy savings without flickering • L90 B10 C2 Railway-friendly • 50,000 hours • Easy installation • MTBF 320 years ● 100% maintenance-free • 5-year warranty • Lifetime 7-11 years • 130 lm / watt chips

Options Include:

T5 LED-	Tube	T8 LED-Tube		T8 LED-Tube with T5 er			
Р-Туре	e 160°	V-Type 200°	Type 320°				
24VdC	36VdC	72VdC	1	10VdC	250AC		





Emeg: In Partnership with Crous Chemicals Crous LED and LECM UK

- SDCM 3/5
- Chips 2835/ 3030
- Rotating end caps





Case Study Kirkdale Depot

Location Merseyside, North West England

Project Overview

Key project features

depot facility

Automatic, one-pass,

drive-through CWM

Bespoke DPS tailored to the

No need to amend operating

procedures and practices

Client BAM Construction for Stadler/Mersey Travel

being produced by Stadler Service AG.

A new service, maintenance and carriage wash machine (CWM)

The buildings were designed to accommodate 65m vehicles

changing rooms & showers, switch room and plant room.

facility was needed at the Kirkdale depot to stable the new rail fleet

comprising 4 carriages and would consist of 3 main areas; the existing

wheel lathe building (circa 1305m²), a new maintenance hall (circa

which would include offices, meeting rooms, storage, workshops,

1360m²) and a new 2-storey accommodation building (circa 2000m²),

• CWM achieves 75%

SOAP efficiency

124 carriages

OWM nightly throughput =

• Comprehensive mechanical

& electrical services



Products & Services

- SafeNet[™] Depot Protection System
- e-wash[™] 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





Case Study: Wigan Springs Branch Depot



Products & Services

- e-vac[™] Controlled Emission Toilets
- e-wash[™] Carriage Wash Machine
- e-mix^m 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 sitespecific 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



Products & Services

- e-vac[™] Controlled Emission Toilets (CET)
- New CET & e-mix[™] plant room
- Vacuum and water booster pump sets
- Apron hot & cold water points
- e-mix^m fuel, engine oil, hydraulic oil, coolant & AdBlue fuel additive
- AdBlue 30,000-litre storage tank
- Fuel pipe fabrication & welding
- e-shore[™] sidings shore supply system
- Mechanical & electrical services
- Cable management

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







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Case Study: Howdon Satellite Depot



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)



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.

Removal of old radiant

Installation of gas-fired

Structural modifications to

heating system

heating system

existing building

Key project features

- Review of existing electrical infrastructure
- Modification of existing distribution network
- Refurb/replace existing supply fans

- **Products & Services**
- e-fume[™] fume extraction system
- Radiant heating system
- Electrical load monitoring
- Fresh air make-up ventilation
- Structural evaluation

"Canton TMD is mainly concerned with the maintenance and daily servicing of the diesel engine fleet. The primary aim of this project was to introduce systems to reduce the contaminants expelled into the atmosphere, improving air quality and thermal comfort conditions. This upgrade work was essential for improving the working environment and safeguarding the workforce from unnecessary fume inhalation."

Case Study Blackburn King Street Depot

Location

Blackburn, Lancashire

Client Northern Rail & Buckingham Group Contracting Ltd (BGCL)

Project Overview

The Northern Hub programme was developed to increase capacity, line speed and connectivity throughout the North West of England. Blackburn Depot is a brand new depot that has been introduced to assist in accommodating the additional rolling stock.

The project included a 12-rotor brush CWM, automatic CET system, tanking water, fuel, oil, coolant and AdBlue storage and dispensing systems, hot and cold water points, sitewide M&E services, telecoms, fire alarm, access control, CCTV and powerpoints.

Key project features

- e-wash[™] Carriage Wash Machine (CWM)
- e-vac[™] Controlled Emission Toilets (CET)
- e-fuel[™] fuel storage & dispensing
- e-mix[™] oil, coolant & AdBlue system

- Tanking water system
- Apron hot & cold water points
- Lighting, LV distribution & telecoms
- Apron hot & cold water points
- Accommodation & plantroom fire alarm



Case Study: Blackburn King Street Depot



Design Services

- Site surveys
- Conceptual design to 'As Built'
- Plantroom domestics
- Lighting plan
- LV distribution plan
- Earthing & bonding plan

"King Street Depot has been designed and built for the future. There is no doubt that innovation coupled with unparalleled experience has created a 5-star facility, not just for Blackburn but the entire Northern region. This £28m design and build project came in on time and £4.5m under budget."



Case Study Blackpool North Maintenance Depot

Location Blackpool, Lancashire

Client Volker Rail & Network Rail

Project Overview

The Northern Hub programme was developed to increase capacity, line speed and connectivity throughout the North West of England. Blackpool is one of the four Network Rail owned depots to be upgraded and have OLE reinstated in order to facilitate the maintenance of the additional electric rolling stock.

The project includes the replacement of existing depot services including automatic sanding systems, e-vac™ controlled emission toilets (CET), e-wash[™] carriage wash machine (CWM) and tanking water to the new servicing aprons.

Key project features

- e-wash[™] Carriage Wash Machine (CWM)
- Water recycling system
- Tanking water
- e-vac[™] Controlled Emission Toilets (CET)
- Automatic sanding system
- Cabling and PW work



Design Services

- Conceptual design to 'As Built'
- Replacement and upgrade of existing CET
- Replacement and upgrade of existing tanking water system
- New Carriage Wash Machine c/w plant room and water recycling
- Automatic sanding system with booster pump for extended distances

"Network Rail appreciated that Emeg is a proactive and connected company when it comes to working with larger main contractors and they have such experience that they can preempt issues due to the company's 'lessons learned' process from project to project."

Case Study Bombardier Transport V-Shop

Location

Derby, Derbyshire

Client **Balfour Beatty**

Project Overview

A new 10,000m² facility for Bombardier Transportation in Derby to enable the final test and sale of trains for the Crossrail project.

The facility comprises 4 roads separately controllable and interlocked, complete with full-length under-carriage inspection pits with lighting and power. In addition, an adjoining 2-storey amenities building comprising open plan & cellular office facilities as well as mess, locker room and toilet/shower areas.

Key project features

- 33kV, 25kV & 6.6kV HV substation, switchgear & distribution
- HV/LV transformed power supplies
- Operational interlock system
- 25kV overhead lines (OLE)
- High-level gas radiant heating

- BMS control system
- Electrical services distribution systems
- Internal and external lighting systems
- Ventilation, cooling & compressed air









Case Study: Bombardier Transport V-Shop



Produ	icts	& S	erv	ices
-------	------	-----	-----	------

- Sitewide M&E existing services surveys
- Site HV diversion and enabling works
- Initial client engagement conceptual design through to 'As Built'
- Level 3 BIM (Building Information Modelling)
- 25kV OLE switchgear
- M&E building services
- LV distribution to the facility and adjoining amenities block
- Lighting design
- Fire alarm & security
- Operational interlock system design



Case Study **Allerton TMD**

Location Liverpool, Merseyside

Project Overview

roads and the neck.

emission toilets (CET).

Existing M&E surveys

Conceptual design to 'As

Design Services

Built'

West.

Client Network Rail & Buckingham Group Contracting Ltd (BGCL)

The Northern Hub electrification programme was developed to

increase capacity, line speed and connectivity throughout the North

Allerton is one of the four Network Rail owned depots to be upgraded

and have OLE reinstated in order to facilitate the maintenance of

the additional electric rolling stock. The project also included M&E

We also designed, supplied and installed our industry-leading

& dispensing, automatic sanding systems and e-vac[™] controlled

services on the five depot shed roads, the six outer carriage cleaning

safeNet[™] depot protection system (DPS), e-fuel[™] smart fuel storage

• LV distribution plan

Lighting, earthing & bonding



Key Project Features

- SafeNet[™] Depot Protection System
- e-vac[™] Controlled Emission Toilets
- Automatic sanding system
- e-fuel[™] fuel storage & dispensing
- Oil & coolant system
- Powerpoints
- Electrical services distribution
- Internal & external lighting systems
- Lighting control system
- Tanking water
- Depot heating solutions

Case Study Northampton **Castle Station**

Location Northampton, England

Client Network Rail & Buckingham Group Contracting Ltd (BGCL)

Project Overview

The original Northampton Castle Station was part of the 'Northampton and Peterborough Railway' line which started at Blisworth and opened in 1845. Designed and built by George R. Stevenson, the Northampton to Market Harborough line was opened in 1859 and after more than 100 years of service, Castle Station closed on 5th June 1950 – the passenger service was finally withdrawn on 26th August 1973.

Forward to 2013 when a new 'gateway' station building and footbridge were constructed to replace the existing station building in a partnership between Network Rail, London Midland and Northampton Council. We were very pleased to be working on such a historical site, providing all associated MEP works.

Design Services

- New station building services
- Integration solutions for all M&E, telecoms & CIS supplies
- Electrical services for footbridge
- Full survey of existing services for efficient decommissioning
- Coordination of reconstruction works for platform 1





Case Study: Northampton Castle Station



Key Project Features

- HV/LV transformed power supply
- Isolated earthing & bonding systems to new NWR standards
- HVAC services systems
- BMS control systems
- Electrical services distribution
- Internal & external lighting
- DALI lighting control system
- Self-contained emergency lighting system
- Intruder alarm system & disabled refuge system
- Piped services & fire protection
- Ventilation & cooling systems





UK Head Office

Emeg Group Ltd 3 Dunston Place, Dunston Road, Whittington Moor, Chesterfield, S41 8NL

T: +44 (0)1246 268678 E: sales@emeg.co.uk

Design Office

Emeg Design Services 5 Scholar Green Road, Stretford, Manchester, M32 0TR

T: +44 (0)161 8656208 E: enq@emeg.co.uk

Dubai Office

Emeg Rail Systems LLC Office 1905, Tameem House, Barsha Heights, Al Thanyah First, Dubai, UAE

T: +971 04 568 6798 E: sales@emegrailsystems.com