



**RAIL DEPOT
LIFTING & HANDLING
EQUIPMENT**



QUALITY
SAFETY
RELIABILITY
INNOVATION



ENGINEERED TO WITHSTAND THE CONSTANT DEMANDS OF RAIL DEPOTS, OUR LIFTING AND HANDLING EQUIPMENT IS BUILT TO OUTPERFORM, OUTLAST AND OUTSMART OUR RIVALS.

OUR COMMITMENT TO INNOVATION AND SUPPORT ENSURES OUR PRODUCTS ARE INHERENTLY SAFE AND ALWAYS SERVICEABLE.

ENGINEERING EXCELLENCE
By combining innovative ideas, technical expertise and traditional engineering skills, our products have pride of place in some of the world's most advanced maintenance facilities.

OFFICIAL SEAL OF APPROVAL
We hold internationally recognised standards for the quality of our products, services and systems. These include ISO 9001:2008, ISO 14001, ISO 18001 and Investors in People.

SAFETY FIRST
Our comprehensive after sales service gives clients peace of mind that once an installation is complete, it will operate safely and reliably throughout its lifetime.

PROLONGING PRODUCTIVITY
By adapting equipment to suit new working practises and making it more productive, we can extend the life of older machinery and ensure it remains relevant to your business.

CUTTING OUR CARBON FOOTPRINT
Green policies are important to us and we seek innovative ways to reduce our environmental impact that benefit employees and customers alike.

RAISING STANDARDS IN RAIL MAINTENANCE

OUR GROUNDBREAKING HEAVY LIFTING PRODUCTS HELP RAIL MAINTENANCE PROVIDERS IMPROVE SERVICING TIMES AND REACH NEW LEVELS OF DEPOT SAFETY AND EFFICIENCY.

WE ARE CONTINUALLY SEEKING NEW WAYS TO EXTEND THE SCOPE OF OUR EQUIPMENT AND WITH THE HELP OF APPROVED DISTRIBUTORS WE HAVE ESTABLISHED AN INTERNATIONAL REPUTATION FOR EXCELLENCE.

1

CONCEPT & DESIGN

We know every rail project is unique and is often subject to change. Our specialist engineers work closely with clients to explore your concept and specification throughout the design stage then tailor our products to meet your requirements. This means they will work as efficiently as possible with local conditions and constraints.

3

DELIVERY & INSTALLATION

Regardless of the distance they have to travel, all our products are packaged carefully and transported by heavy goods specialists. Upon arrival at site, they are reassembled, if necessary, installed and commissioned by our expert technicians or local representatives. A site acceptance test is then carried out before the equipment is handed over to the client.

2

BUILD & TEST

Our manufacturing facility in England has been at the heart of Mechan's operations since 1969 and we are very proud to say our products are Made in Sheffield. Before any order is despatched, the equipment is assembled in our factory and tested rigorously to ensure every nut and bolt is in full working order.

4

MAINTENANCE & AFTER CARE

Our technicians are fully trained. We operate a 24 hour breakdown service and carry an array of spare parts, to speed up response times. Our specialist maintenance contracts are tailored to your needs, whilst we can also help improve the performance of existing equipment.

OUR FLAGSHIP JACKS ARE RAISING STANDARDS IN THE TRANSPORT INDUSTRY.

THANKS TO OUR PATENTED MEGALINK CONTROLLER, THEY ENABLE THE SYNCHRONISED LIFTING OF MULTIPLE RAIL CARS BY A SINGLE OPERATOR.

TECHNICALLY AND COMMERCIALY VIABLE

Any number of jacks can be linked together using our innovative Megalink system. We can also modify the design to suit wider or taller vehicles.

DURABLE AND LONG LASTING

We build jacks that are designed to work hard in any environment and have a minimum design life of 25 years – far longer than that of other lightweight alternatives. Safety is a priority and they will maintain a load even when power is lost.

VERSATILE AND EASY TO INSTALL

Our jacks enable coordinated use to a 3mm tolerance and have a lifting capacity ranging from five to 50 tonnes. They are quick to set up, interlink and substitute and can cater for all types of rail vehicle.

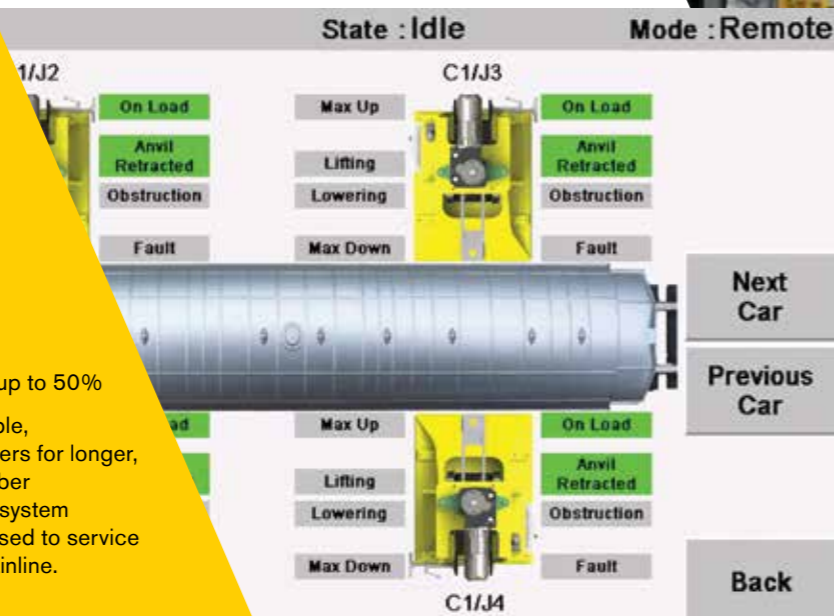
A mobile version with a fixed or moving anvil is available and rail mounted jacks can also be provided. They do not require the installation of underground cabling and can be moved using a wide legged proprietary pallet truck. It is possible to position them along a road and leave in place, as the anvils can be retracted to allow a vehicle to pass.

MEGALINK CONTROL SYSTEM

Our unique Megalink controller is the most flexible and technically advanced in its field. By using a handheld panel, Megalink allows operators to control the lift from their preferred location.

- Touch screen HMI panel provides constant feedback
- Information recorded on usage and faults
- Inverter technology offers power savings of up to 50%

Megalink uses a combined power and data cable, minimising installation costs. The controller caters for longer, high speed trains and an almost unlimited number of jacks can be operated together. The largest system produced to date is a 44-jack chain, which is used to service 11-car Pendolinos on the UK's West Coast Mainline.



BECAUSE TRAMS SIT SO CLOSE TO THE FLOOR, THEY REQUIRE A SPECIAL TYPE OF MAINTENANCE JACK.

Our design combines an ultra low lifting arm with fast operational speeds and is available in small capacities to suit light vehicles.

Capacity: From three tonnes

Type: Low floor design

Control: Optional six jack set to lift coupled or articulated trams



TRAM

OUR JACKS SUIT ALL TYPES OF INTERCITY VEHICLES AND CATER FOR ANY CONFIGURATION OR WEIGHT.

Capacity: Typically 15 to 25 tonnes

Type: Mobile or rail mounted jacks available with bespoke lift heights and speeds

Control: Our Megalink controller lifts any number of synchronised jacks



INTERCITY

METROS DIFFER IN WEIGHT, CONSTRUCTION AND GAUGE.

We offer jack designs to suit all types of vehicle and can cater for any configuration or load.

Capacity: From five tonnes

Type: Mobile or rail mounted jacks available with bespoke lift heights and speeds

Control: Our Megalink controller lifts any number of synchronised jacks



METRO

HIGH SPEED

OUR JACKS SUIT ALL TYPES OF HIGH SPEED VEHICLES AND CATER FOR ANY CONFIGURATION OR WEIGHT.

Capacity: Typically 15 to 25 tonnes

Type: Mobile or rail mounted jacks available with bespoke lift heights and speeds

Control: Our Megalink controller lifts any number of synchronised jacks



WE OFFER A WIDE RANGE OF JACKS SUITABLE FOR ALL TYPES OF REGIONAL RAIL VEHICLE, OF ANY CONFIGURATION OR WEIGHT.

Capacity: Typically 10 to 20 tonnes

Type: Mobile or rail mounted jacks available with bespoke lift heights and speeds

Control: Our Megalink controller lifts any number of synchronised jacks



REGIONAL

FREIGHT LOCOMOTIVES ARE THE HEAVYWEIGHTS OF THE RAIL WORLD AND REQUIRE HIGH CAPACITY LIFTING JACKS.

Our units are incredibly strong and reliable, yet still offer the same flexibility and usability as their lighter counterparts.

Capacity: Typically 30 to 50 tonnes

Type: Mobile or rail mounted jacks available with bespoke lift heights and speeds

Control: Our Megalink controller lifts any number of synchronised jacks



FREIGHT

EQUIPMENT DROP

REMOVE OR REPLACE UNDERCARRIAGE EQUIPMENT WITHOUT DECOUPLING RAIL VEHICLES. OUR VERSATILE DROPS ALLOW COMPLETE BOGIES, WHEELSETS AND OTHER MODULES TO BE CHANGED QUICKLY AT TRACK LEVEL SO OTHER MAINTENANCE CAN CONTINUE.

BOGIE DROPS

We produce bogie drops with three types of mechanism – the traditional scissor action, our intelligent screw jack system incorporating lift towers, or the self contained screw jack. The latter versions are favoured by depot operators for their greatly reduced pit depth, minimising civil costs during construction.

EFFICIENT SERVICING

Our drops lower equipment away from the train so it does not need to be split or lifted, allowing other maintenance, inspection or cleaning to continue while work is taking place. This means bogie change is feasible within two hours and the vehicle can be returned to service as quickly as possible.



UNRIVALLED FLEXIBILITY

You can tailor make any Mechan equipment drop to the unique needs of your depot with our wide range of optional extras. They include:

- Scissor or screw type lifting
- Floor level or portal body supports
- Centre and/or side pits in the bridge
- Bogie support arms for wheelset removal
- Single or twin bridge design
- Adapters for all types of under car module

SYSTEMS TO SUIT YOU

The configuration of our equipment drops depends on the rolling stock you are handling and the potential for civil works on site. They are easier to install in new facilities, but our expert engineers can find suitable solutions for existing maintenance depots. A rail mounted module handler is often supplied with the systems to interface between the bridge and the unit being removed.

ALL ROUND ACCESS

A pit continuation can be added to our drops to provide full clearance under the vehicle, whilst side platforms give access to the item being changed. When not in use, the rail beams latch into place ensuring the road is safe for depot traffic.



EQUIPMENT DROP



UNDER CAR EQUIPMENT HANDLING

Under car lifting systems allow engines and other modules to be changed without lifting the train.

SELF CONTAINED / LOW IMPACT

Sitting in a shallow pit passing under the track, our systems have removable rails that support various axle loads. In normal circumstances, they are latched into place to keep the road open for general maintenance activities. When an exchange is required, the vehicle is positioned with the relevant module located centrally above the rails.

RAIL MOUNTED LIFT TABLE

A hydraulic scissor lift trolley is stored with its tabletop at floor level, creating a pedestrian walkway when not in use. It traverses under the rails from the stowed position and is then raised to take the weight. Once disconnected, the beams can be pushed aside and the table lifted to the required height for removal or replacement, via remote control or hardwired pendant.

ADAPTABLE AND ACCURATE

The trolley can travel independently of its floor plate, allowing a smaller tabletop to be attached when removing lighter units, such as gearboxes. When the engine or module has been removed, the table is lowered and traversed to a position where the unit can be collected by forklift or crane.

RAIL REMOVAL SYSTEMS

When it is not necessary to detach a complete bogie, rail removal systems offer a cost effective alternative to exchanging wheelsets and under car modules.

Vehicles are positioned so the relevant bogie section is on the removable rails. It is then lifted onto manually operated hydraulic rams, located below the frame. Once the rails have been disconnected, a scissor lift table is traversed under the vehicle by remote control to facilitate the removal and replacement of equipment.

This conventional table is available with various adapters and when not in use, it is latched into place on the depot floor to keep the maintenance road open.



UNDER CAR MOBILE HANDLING



OUR RANGE OF UNDER CAR MOBILE HANDLING EQUIPMENT IS DESIGNED TO ASSIST THE REMOVAL AND REPLACEMENT OF MODULES, ENGINES AND COUPLERS.

BESPOKE DESIGN

Thanks to our extensive experience in the rail industry, Mechan will design a solution to your specific handling problem. Using the latest 2D and 3D CAD systems we can produce equipment to meet the needs of any depot maintenance process.

UNRIVALLED RANGE

Our range of equipment is unrivalled, from manipulators for under car module removal, such as air conditioning units or batteries, to semi-automated coupler removal systems, as pictured to the left. Dimensions and capacities depend on the application, with variations available to work within the pit or on the depot floor.

EASY OPERATION AND MAINTENANCE

Mechan equipment is designed to assist the operator and wherever possible, off the shelf components are used to make future maintenance easier.



CHOICE AND FLEXIBILITY

We offer a wide range of under car lifting systems, designed to suit varied locations and applications, including:

- Powered lift table – offering lateral travel, the table lifts, tips, rotates and traverses, making it suitable for various modules
- Dual mode powered lift table – providing the same functionality as above, the table is fitted with workshop and rail wheels for added versatility
- Traction motor removal unit – a rail mounted table with adjustable top
- Manual hydraulic unit – fitted with a battery box adapter and a wide, stable leg arrangement to counterbalance the manual operation
- Under car manipulator – slotting into a normal centre pit, this unit maintains a level surface at all times and is available with an assortment of adapters

BOGIE LIFTING & HANDLING

WE OFFER A WIDE RANGE OF PRODUCTS DESIGNED TO MAKE THE REMOVAL, REFURBISHMENT AND MAINTENANCE OF BOGIES SAFER AND MORE EFFICIENT.

BOGIE FRAME ROTATORS

Working in pairs, our rotators lift and turn a bogie to provide access to all areas in an ergonomic and safe manner.

Electrically driven screws with bronze load and safety nuts provide the lift. The screws' non-reversing system supports the load at all times, whilst the nut is fitted with an automatic lubricator and wear detector.

- Rotating faceplates
- Modified feet provide a wide and stable base
- Synchronised jacks to ensure simultaneous lift

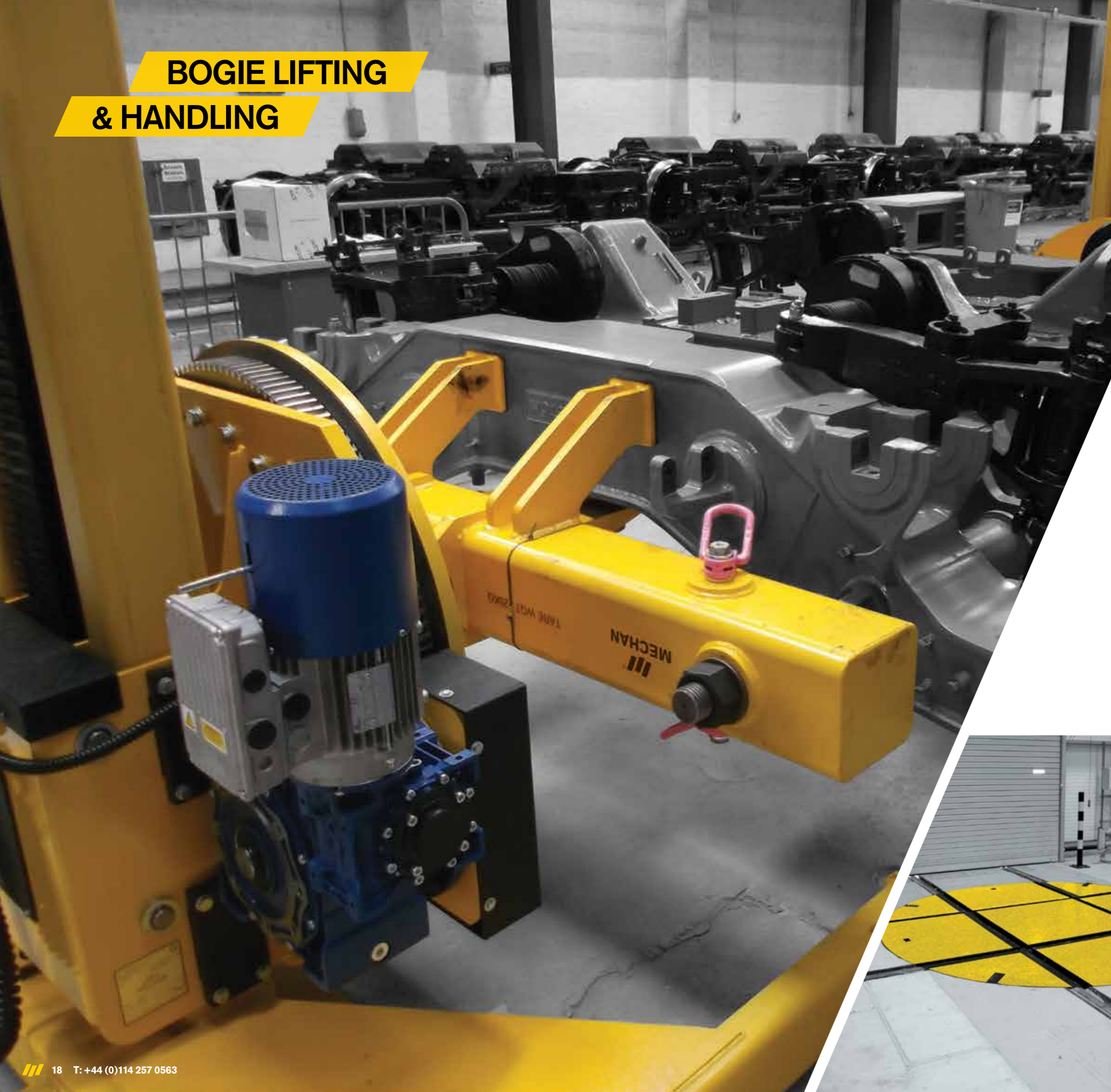
The master jack is fixed to the floor using conventional studs and the single panel controller attached to its rear. The slave jack is then mounted on guide rails to enable the fitting and removal of the bogie frame between the two units.

BOGIE TURNTABLES

Manual or electrically powered turntables enable bogies to be transferred between roads within maintenance facilities. They are normally fitted with double cross rails and a manual latch to hold them in position when lined up with the workshop rails.

BOGIE LIFTING PLATFORMS

Our platforms allow an operator to access the bogie's underside by raising it to a comfortable working height. They are located in the workshop floor so nothing but the flat plates and a pair of rails can be seen when not in use. As the platforms are designed to take the weight of a forklift truck, normal equipment can pass over without hindrance.



BOGIE PRESS

A PRESS IS USED TO MIMIC THE LOADS IMPOSED ON A BOGIE BY A RAIL VEHICLE AND TO SETTLE THE SUSPENSION SO NO FURTHER ADJUSTMENT IS NEEDED WHEN THE BODY IS FITTED.

THE RIGHT RIDE HEIGHT

Following build, repair or refurbishment, a bogie press is employed to ensure the ride height is set correctly. The unit bridges the rails and consists of cylinder(s) that apply load to the suspension points. Adapters can be used to accommodate different types of bogie.

SPREADER BEAM FOR BETTER PERFORMANCE

We usually advise clients to fit a beam under the rails to transfer the weight from the bogie's wheels to the press structure. It can be mounted in the floor in depots where rails are flush or under a raised section.

ELECTRIC POWER MAKES OPERATION EASY

The press is normally powered by a three-phase electrical supply and will have an independent electro-hydraulic power pack to operate the cylinder(s).

OTHER OPTIONAL FEATURES INCLUDE:

- Load measurement by hydraulic pressure or solid state load cells
- Wheel load measurement to check load distribution
- Bogie ride height measurement
- Power feed for bogies into press
- Auxiliary rails to move press into bogie position
- Automation of some or all functions
- Data logging with report print out and storage



TRAVERSERS

BUILT TO YOUR NEEDS

From concept to manufacture and installation, we produce traversers that meet individual workshop and vehicle requirements. They are based on two basic design principles – multi rail or bridge. Both offer the same control functionality and, of course, the same Mechan build quality.

ANY SIZE

We are very proud to have produced the largest traverser in the UK, which has a capacity of 170 tonnes, but because each one is made to order, any size is possible from 60 tonnes up. This means our units are capable of moving anything from a single rail vehicle to the heaviest freight locomotives.

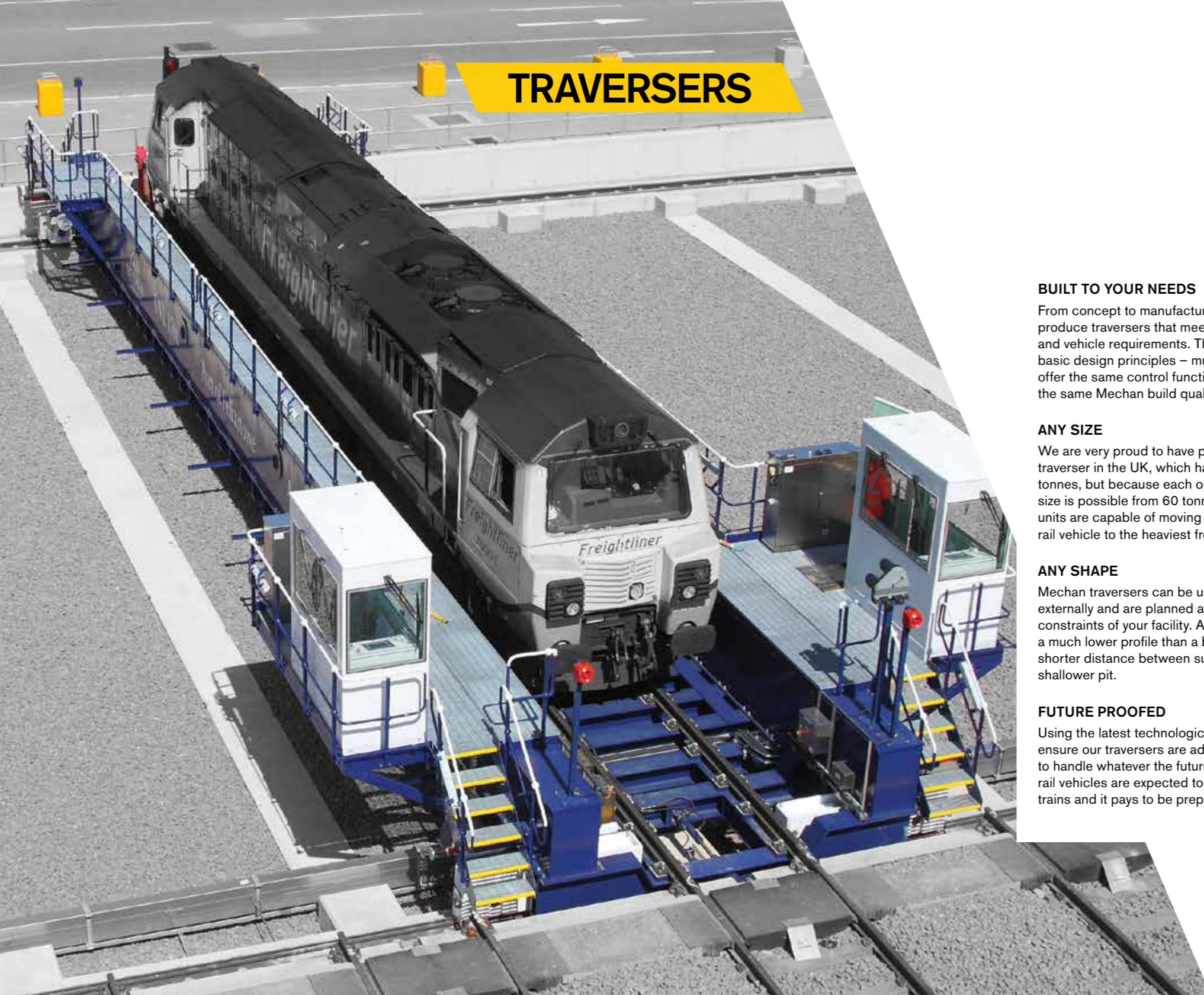
ANY SHAPE

Mechan traversers can be used internally or externally and are planned around the practical constraints of your facility. A multi rail system has a much lower profile than a bridge, thanks to the shorter distance between supports and requires a shallower pit.

FUTURE PROOFED

Using the latest technological developments, we ensure our traversers are adaptable and equipped to handle whatever the future holds. Tomorrow's rail vehicles are expected to be larger than current trains and it pays to be prepared.

NO JOB IS TOO LARGE OR SMALL FOR OUR EXPERT ENGINEERS. WE DESIGN, CONSTRUCT AND COMMISSION COMPLETELY BESPOKE TRAVERSERS AND TURNTABLES TO THE UNIQUE DEMANDS OF YOUR SITE.





ACCOMMODATION BOGIES

ACCOMMODATION BOGIES – SOMETIMES CALLED DUMMY BOGIES – SUPPORT A VEHICLE AT THE RIGHT HEIGHT FOR MAINTENANCE TO CONTINUE UNDERNEATH WHEN THE WORKING BOGIE IS NOT FITTED.

MULTIPURPOSE

They are ideal for use during the production of new vehicles or in depots where the base of existing rolling stock requires attention after the bogie has been removed.

UNLIMITED CAPACITY

The lifting capacity of our accommodation bogies ranges from five tonnes upwards and can be tailored to the needs of your facility or the vehicles being serviced.

ADAPT TO YOUR NEEDS

Suitable for indoor or outdoor use, they can be constructed to run on straight or curved track profiles and are available with a range of useful features, as detailed left.

OPTIONAL EXTRAS

Increase the versatility of your accommodation bogies with the addition of:

- Larger profiled wheels
- Swivelling top frames
- Suspension and adjustable height
- Powered travel
- Stilts for a fixed working height



STANDS & STORAGE

WHEN DEPOT SPACE IS AT A PREMIUM, KEEP SPARE BOGIES, WHEELSETS AND OTHER UNDER CAR EQUIPMENT STORED SECURELY AND EFFICIENTLY WITH OUR INNOVATIVE STANDS AND STACKING FRAMES.

BOGIE STANDS

We supply a range of bogie stands that support wheel treads to protect flanges and paintwork on the frame.

LOW AND HIGH LEVEL

Stack equipment for storage purposes with our low level stands, which can be left freestanding or bolted to the ground. High level stands usually support bogies at around 1,000mm to give a comfortable working position. They too can be attached to a concrete floor or supplied with castors for mobility.

ONE PIECE STACKING FRAMES

Supplied with self locating plates for the safe storage of equipment, our one piece stacking units are fitted with lifting eyes suitable for raising the frame.



CRANES

WE DESIGN, DEVELOP AND MANUFACTURE AN IMPRESSIVE RANGE OF STANDARD AND BESPOKE HANDLING EQUIPMENT THAT EXTENDS FAR BEYOND THE SIMPLE JIB CRANE.

DECADES OF EXPERIENCE

Since fulfilling our first order in 1969, we have established an unrivalled reputation for quality, safety and reliability, thanks to the consistently high standards of our products.

EXTENSIVE KNOWLEDGE

The specialist cranes we create demonstrate the breadth and depth of our expertise. As a result, our lifting equipment can now be found in some of the world's most inhospitable and hazardous places.

LONGSTANDING RELATIONSHIPS

Customers value Mechan's innovative, durable products and our client portfolio comprises world renowned organisations operating in high integrity environments, such as Alstom Transport, Rolls Royce, BP Chemicals and Network Rail.

LIFTING BEAMS

REMOVE AND REPLACE VEHICLE COMPONENTS EASILY AND SAFELY WITH OUR RANGE OF USEFUL LIFTING BEAMS AND ATTACHMENTS.

HVAC LIFTING BEAMS

We offer lifting beams specifically designed for the removal or replacement of heating, ventilation and air conditioning equipment, which can be attached to jib or overhead cranes.

Purpose built lifting beams and frames can also be supplied for:

- Engines
- Gearbox and transmission
- Transformers
- Under car modules

PANTOGRAPH LIFTING BEAMS

Designed specifically for the removal and replacement of the pantograph from rail vehicles, these special low profile lifting beams can be provided with counterbalance options for offset loads if necessary.

BOGIE LIFTING BEAMS

These beams can be adapted to suit different bogie characteristics, giving you greater flexibility. Again, they can be used with a forklift truck or overhead crane.

WHEELSET LIFTING BEAMS

By connecting with the inside of the wheel rim, our lifting beams enable wheelsets to be moved around a maintenance facility using a crane or forklift truck.



MAINTENANCE SERVICE

PEACE OF MIND

Regular maintenance reduces downtime and prolongs productivity.

RELIABLE STOCK LEVELS

Technicians carry a selection of the most commonly replaced spares to ensure repairs can be undertaken immediately.

RAPID RESPONSE

An on call engineer will endeavour to visit your site without delay.

WE OFFER A COMPREHENSIVE AFTER SALES SERVICE, TO GIVE CLIENTS PEACE OF MIND THAT ONCE AN INSTALLATION IS COMPLETE, IT WILL OPERATE SAFELY AND RELIABLY THROUGHOUT ITS LIFETIME.

PLANNED MAINTENANCE

We provide a host of specialist maintenance programmes tailored to your needs. Contract customers can also benefit from reduced hourly rates for emergency callouts and access to unrivalled technical support.

FINE TUNING YOUR PRODUCTIVITY

We offer a range of technical services to improve the performance and practicality of your equipment.

SPARE PARTS

We hold an extensive range of spare parts not only for our own products, but also for the third party brands and ancillary equipment we supply to the UK and Irish markets.

EMERGENCY CALL OUT

Our fully qualified, talented technicians offer a 24 hour nationwide breakdown repair service, to respond swiftly and efficiently in an emergency situation.



REFURBISHMENT

RESTORE AND REBUILD

Our vast knowledge of depot maintenance products and hands on experience means we have the skills to:

- Refurbish and repair any equipment, reengineering obsolete parts when required
- Upgrade power and control systems to improve precision, flexibility and efficiency
- Recondition worn out machinery and conduct midlife overhauls
- Incorporate old equipment, regardless of original manufacturer, into a new Mechan system

WE CAN BREATHE NEW LIFE INTO OLD DEPOT EQUIPMENT, SAVING YOU THE TIME AND MONEY NEEDED TO FIND A REPLACEMENT.

OUT WITH THE OLD?

Increased demand, changing operational needs and today's rigorous safety standards can all end the useful life of aging apparatus. Or so you may think...

AS GOOD AS NEW

Our expert engineers offer a complete refurbishment service to prolong the longevity of equipment and upgrade old or out of production models if direct replacements are not readily available.

VALUE YOUR ASSETS

Even the most dilapidated machinery is not necessarily beyond salvation. We can recondition many parts and rebuild those that cannot be repaired.

WE ARE PROUD TO BE INTRODUCING THE UK AND IRELAND TO A RANGE OF THIRD PARTY INNOVATIONS THAT COMPLEMENTS OUR IN HOUSE LIFTING AND HANDLING EQUIPMENT.

KLEIN IS THE WORLD LEADER IN SANDBOX FILLING SYSTEMS FOR RAIL VEHICLES.

- Mobile or installed systems
- Nozzles designed to suit your vehicle sandbox
- Environmentally friendly and no heavy lifting of sand bags



KLEIN SANDING SYSTEMS

THE FOLLOWING PRODUCTS HAVE BEEN HANDPICKED BY US FROM LEADING EUROPEAN MANUFACTURERS WHO SHARE OUR COMMITMENT TO QUALITY, SAFETY AND RELIABILITY.

CONDUCT NON-CONTACT MEASUREMENT OF ALL RELEVANT WEAR PARAMETERS FOR VEHICLES AND INFRASTRUCTURE INCLUDING WHEELSET, RAIL AND SWITCHES.

- Multifunctional and cost saving
- User-independent and reproducible results
- Easy and fast measurement



NEXTSENSE CALIPRI



BLASCHKE EXHAUST EXTRACTION

MAKE YOUR DEPOT CLEANER AND MORE EFFICIENT.

- Airtight removal of fumes directly at the source is guaranteed, increasing power generation and enabling smaller fans to be used, which lowers energy consumption and noise levels.
- Compliant with European regulation TRGS 554
- Meets TRK exposure limit for diesel particulates (elemental carbon)



ZWIEHOFF RAIL SHUNTERS

ZWIEHOFF OFFERS CUSTOM-DESIGNED MULTIPURPOSE SHUNTING VEHICLES - SAFE, EFFICIENT AND DURABLE.

- Electric shunters from 250 tonnes up to 4,000 tonnes
- Compact, extremely manoeuvrable and energy efficient
- Eight to ten hours operating time on full battery - emission free

KOLTECH SPECIALISES IN THE DESIGN AND MANUFACTURE OF CNC CONTROLLED WHEEL LATHES FOR TURNING RAIL WHEEL PROFILES.

- TUP range of underfloor wheel lathes for turning wheels in situ
- TUU range of above floor wheel lathes



KOLTECH WHEEL LATHES


A FULLY AUTOMATED CONTACTLESS MEASUREMENT SYSTEM FOR WHEELSETS ON RAIL VEHICLES.

- Measurements taken as the vehicle enters or leaves the depot, indoor or outdoor
- Measure wheel profile, back-to-back and diameter
- Includes software for management and analysis



VISIONA WHEELPRO SYSTEM




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