



Performance in motion



# Signalling & Electrification

Product Application Guide - Issue 1



# INTRODUCTION

Thomson Engineering Design Ltd has been designing and building rail infrastructure component handling equipment since 1999. We now offer an unrivalled range of products and are frequently called upon to construct custom solutions for individual clients around the world.

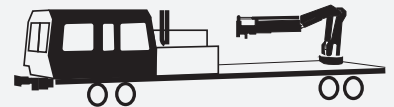
Today, our range of signalling and electrification product range extends to cover every aspect of the construction and installation of these systems. This short guide offers advice on selecting the best product for your specific requirements and we hope you will find it informative. If, however, you require further information or if you would like to discuss a unique challenge, please contact our technical department by email to [technical@thomsondesignuk.com](mailto:technical@thomsondesignuk.com).

## QUALITY & SAFETY BUILT-IN

Thomson Engineering Design Ltd has an unrivalled reputation for the quality and reliability of its products and is accredited to ISO9001:2015 for design, manufacture, testing and documentation of machinery and equipment. The company also holds a number of other rail industry supplier qualifications.



**SUITABLE FOR USE WITH KNUCKLE BOOM CRANES ON BOTH ROAD AND RAIL VEHICLES. WHERE AN ATTACHMENT IS SUITABLE FOR RAIL MOUNTED MACHINES BUT NOT ROAD VEHICLES THE ICON ON THE RIGHT IS USED.**



**SUITABLE FOR USE ON ROAD RAIL EXCAVATORS**



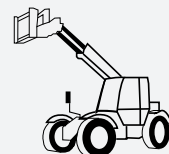
**SUITABLE FOR USE WITH TRACKED EXCAVATORS / WHEELED EXCAVATORS / HEAVY CONSTRUCTION MACHINES**



**SUITABLE FOR SPECIAL PURPOSE MATERIALS HANDLERS SUCH AS SPEEDSWINGS, TELEHANDLERS AND LOADING SHOVELS**



**SUITABLE FOR USE WITH GENERAL PURPOSE CRANES**



**SUITABLE FOR USE WITH GANTRY / YARD CRANES**

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All our attachments can be supplied with custom built adapter systems to suit any host machine. Download our Adapter Head Selection Guide for full details of fixed, rotating, quick change, and all other types.

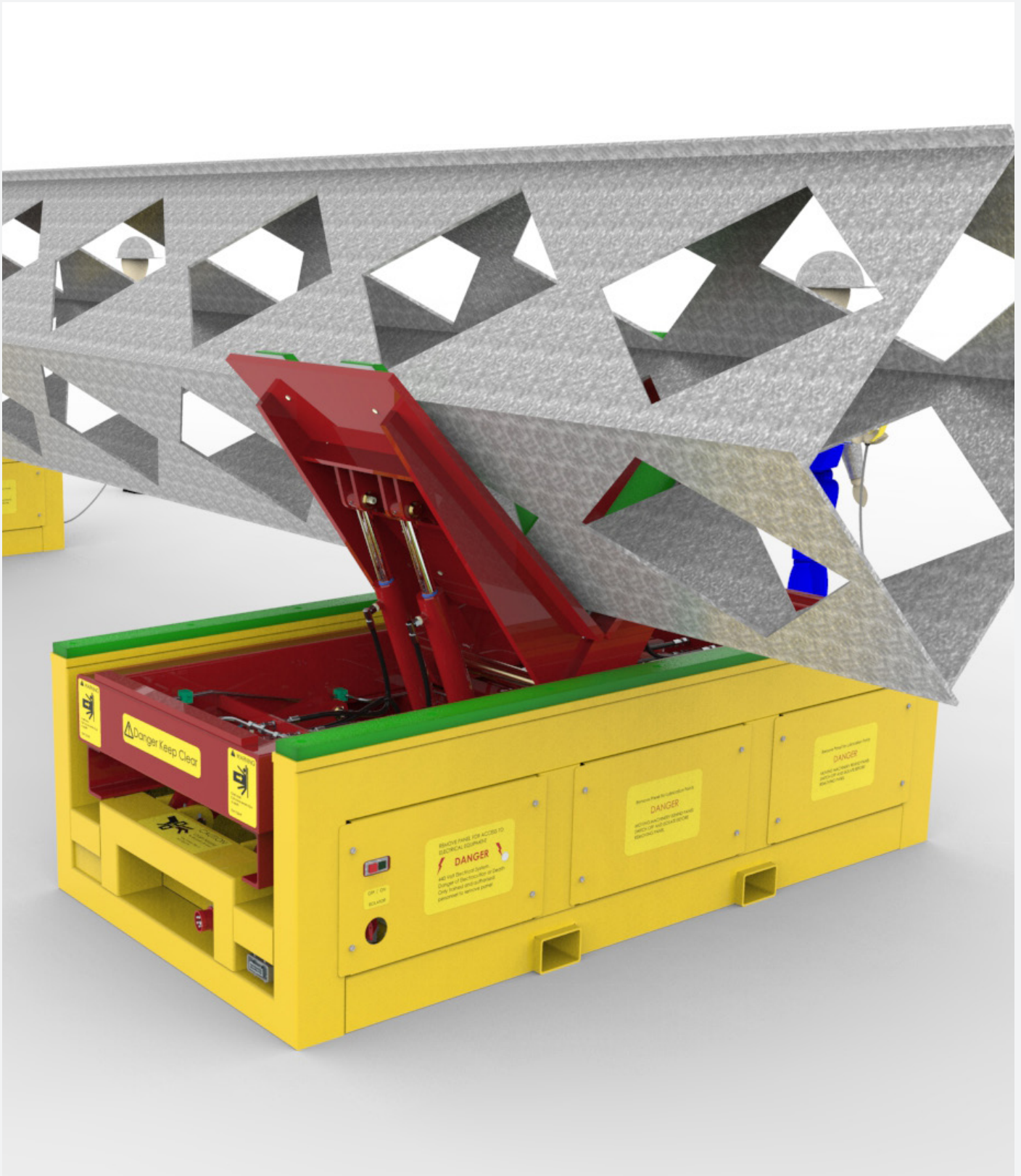
The guide includes details of what measurements we will need from your machine in order to ensure a perfect 'plug-and-play' fit.

**Email [railplant@unipartrail.com](mailto:railplant@unipartrail.com) for more details.**

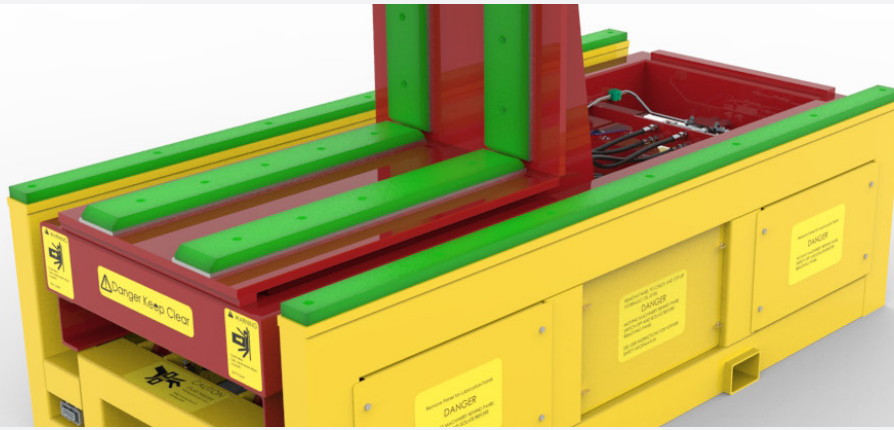




# STEELWORK ASSEMBLY BENCHES







## KEY FACTS

Thomson Steelwork Assembly Benches incorporate a walking table and a load rolling mechanism allowing two benches to move and turn loads up to 4,200kg (9,250lb).

Used in pairs these benches allow heavy cross gantries to be dressed ready for installation on site without workers having to climb onto or under these heavy structures.

Fork pockets in the base allow the benches to be easily moved and positioned.

The benches require a 440V three-phase supply and are controlled using a plug-in pendant controller allowing operators to stand completely clear of the area whilst loads are manipulated.

Urethane wear pads on the frame and the walking / rotating deck prevent damage to galvanised and painted surfaces.

## ALTERNATIVE PRODUCTS

Where no handling functions are required, Thomson Certificated Trestles provide a safe platform for long steel sections.



# CERTIFICATED TRESTLES





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## KEY FACTS

Used to support heavy steel sections during dressing, Thomson trestles are designed, tested and certified to suit clients' requirements and each unit is individually serial numbered for ease of traceability.

Fully welded box-section steel frames with long diagonal braces give these trestles high rigidity and stability and they can be specified in any length and load rating.

Standard features include fork pockets for easy and safe movement and positioning and optional rubber or urethane top pads to prevent damage to painted or galvanised surfaces.

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## ALTERNATIVE PRODUCTS

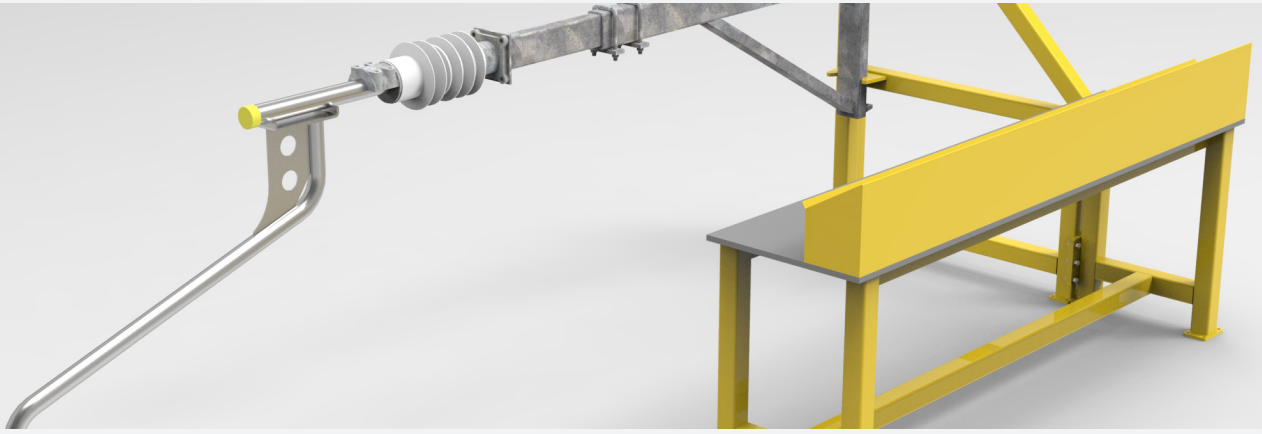
Where steel sections must be dressed on more than one face our Steelwork Assembly Benches provide a built-in manipulator system to move and roll heavy sections.





# CUSTOM MADE BENCHES AND TROLLEYS





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## KEY FACTS

Thomson Engineering Design can support all parts of the pre-installation process through our special products team, designing and building to order all types of component assembly solutions.

Some examples shown here of products supplied to the assembly shop for the UK Great Western Electrification Project include lifting gear stowage / dropper racking and cantilever arm assembly benches.

Each product is individually tailored to suit the adopted assembly process, embodying lean methodologies within the design to maximise efficiency.

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## BASIC PROCEDURE

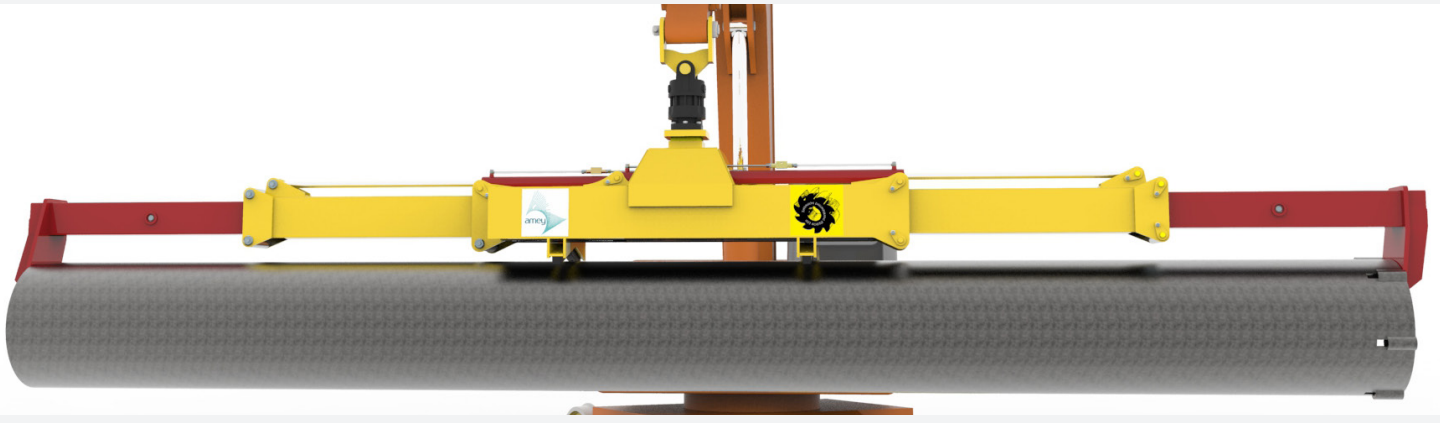
Our team will produce full dimensioned drawings, simulations and rendered concept images of all products prior to build.



# PH15-08 STEEL TUBE PILE HANDLER







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## KEY FACTS

Designed for loading and unloading steel tube piles from 3m (10ft) to 8m (26ft) long and weighing up to 2,500kg (5,500lb) this device incorporates roller mounted double telescopic arms, a heavy duty hydraulic rotator and an automatic load-levelling feature.

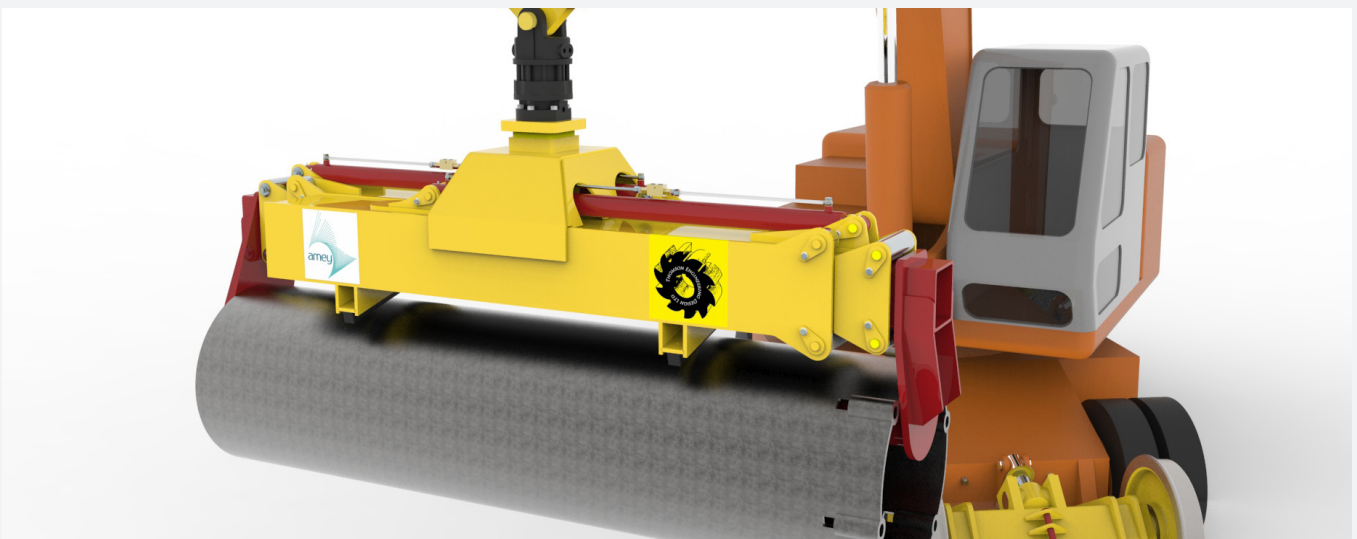
Check valves on the cylinders and a parachute valve system to prevent accidental release of the load and built in pressure control valves ensure plug-and-play compatibility with a wide range of excavators and materials handlers.

The device is supplied complete with its own transport / storage stillage which includes fork pockets for safe and easy handling.

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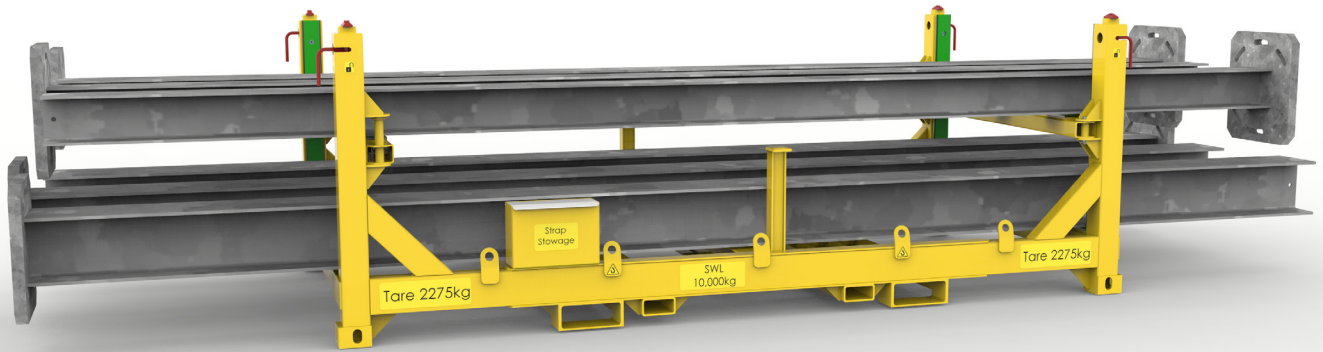
## ALTERNATIVE PRODUCTS

Thomson Engineering Design also make a range of rigid lifting beams for all lifting purposes.



# MAST STILLAGES





## KEY FACTS

Specially designed for the storage and transportation of mast fabrications, Thomson mast stillages are stackable, incorporate urethane contact pads, fork pockets, lifting points and stowage containers for lashing straps.

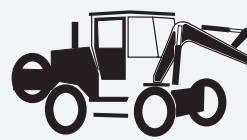
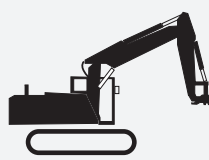
Stillages can be supplied to fit ISO twist lock dimensions for use on trucks or wagons or with corner blocks to suit proprietary rail trailers.

Stillages are designed to be lifted when fully laden and stacked up to 4 stillages high. When stacking stillages the twist lock features in the top of the corner posts lock the stillages together for safety.

When empty, the middle cross beam allows these stillages to be lifted using our SM15 Steel Manipulator.

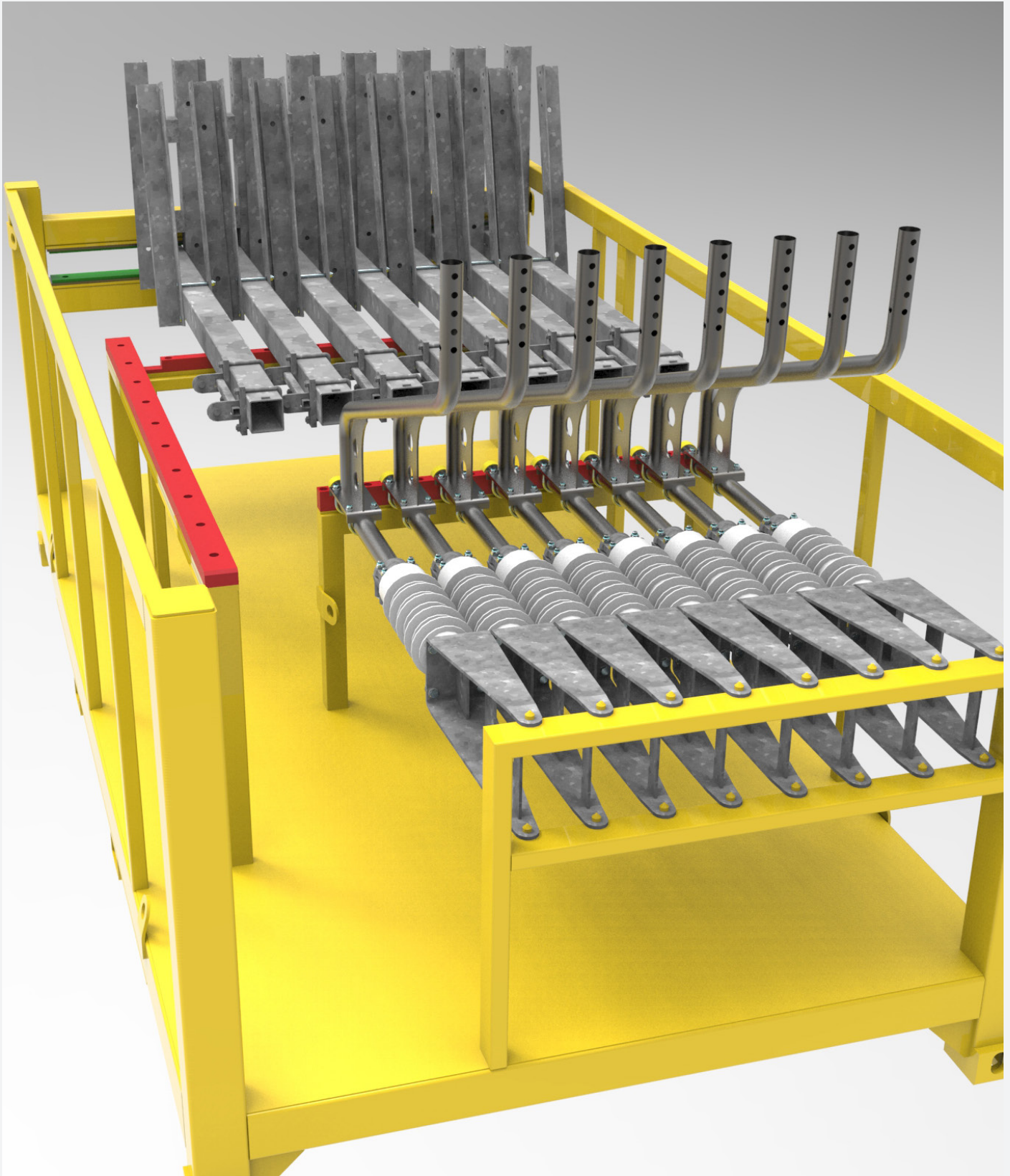
## ALTERNATIVE PRODUCTS

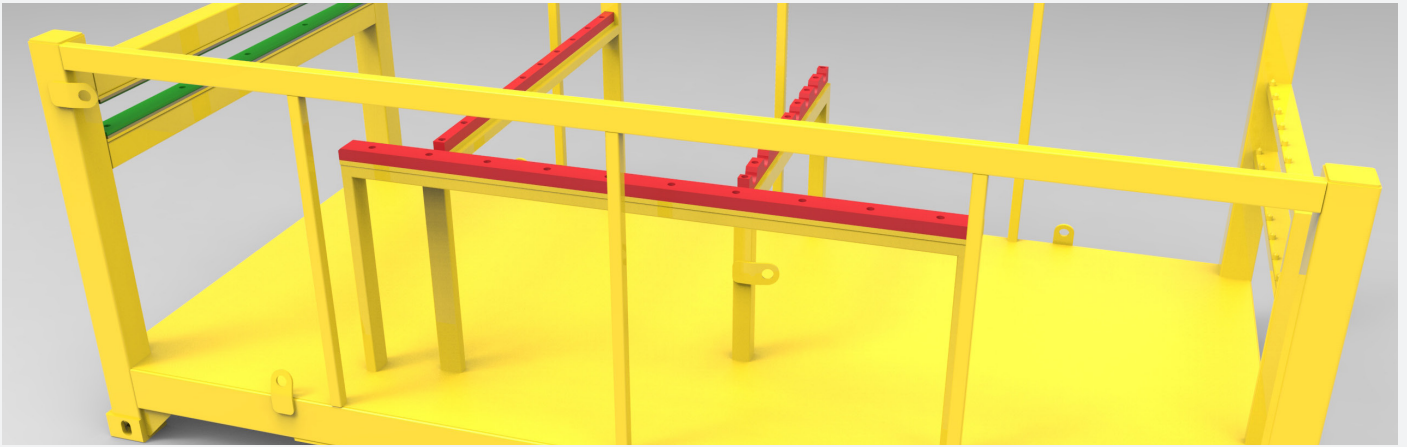
Thomson Engineering Design offer a design and build service for custom stillages such as the stovepipe assembly stillage.





# STOVEPIPE ASSEMBLY STILLAGE





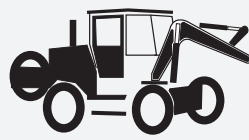
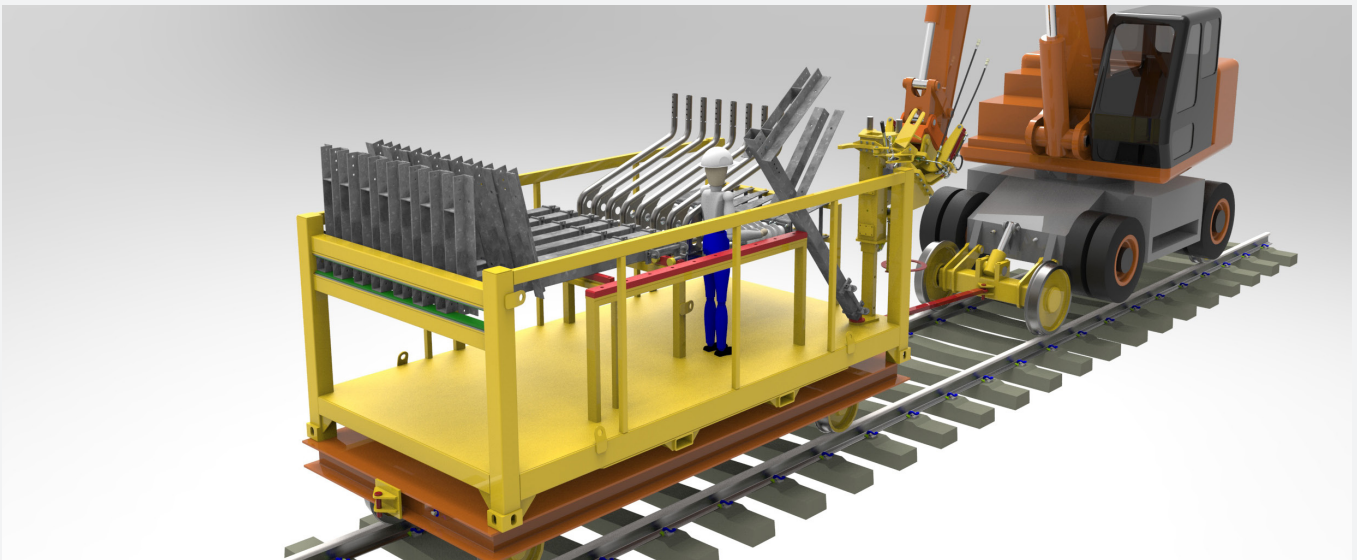
## KEY FACTS

An example of our custom design and build service, these stovepipe assembly stillages were successfully deployed on the UK Western Region Electrification project to deliver pre-built stovepipe and cantilever assemblies.

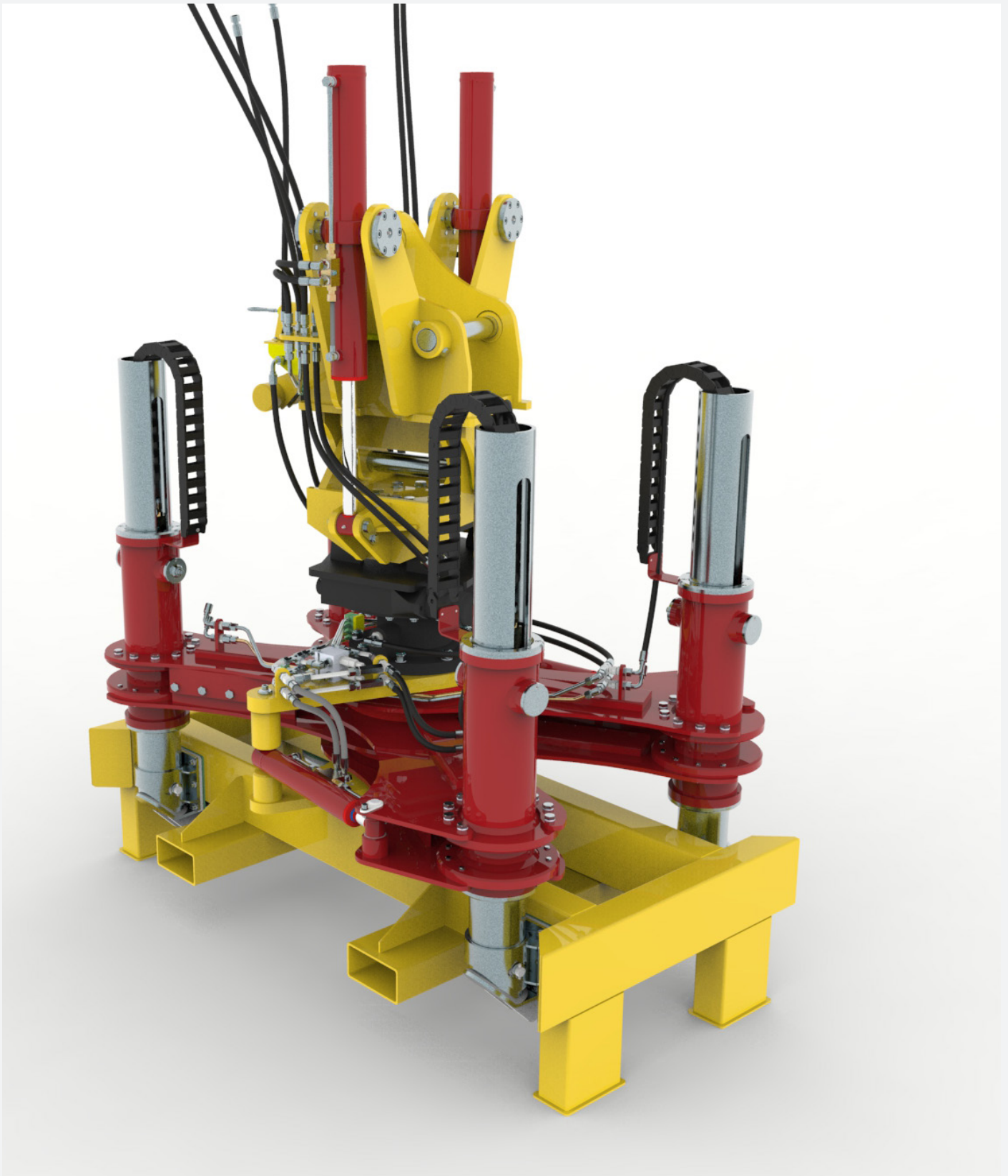
Used in association with our Stovepipe Lifting Attachment these stillages helped to provide a significant increase in output and tangible benefits in terms of safety and performance.

## ALTERNATIVE PRODUCTS

Thomson Engineering Design welcome enquiries for similar products for any purpose.



# SM15 STEELWORK MANIPULATOR







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## KEY FACTS

The SM15 Steelwork Manipulator grips, lifts, erects, positions and holds masts and gantry sections of all shapes and sizes up to 650mm (25.5 in) in any dimension and weighing up to 3,750kg (8,250lb).

Four retracting legs on a scissor action main frame squeeze urethane pads against all four sides of the load for a safe and secure grip.

Fixed adapters are fitted for machines with tilt-rotators or the unit can be supplied with its own built-in tilt-rotator to give full manipulation and high precision in the erection and installation of masts onto concrete or steel pile foundations. Adapters are also available for fitting to tele-handlers and front loaders.

A pendulum safety valve may also be specified. This locks the grab functions as the mast is elevated and requires the banksman to release this valve before the operator can open the grab.

For easy and safe transport and storage the device can be supplied with its own transport stillage.

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## ALTERNATIVE PRODUCTS

The SPM16-02 is an ideal alternative for handling round structures such as signal posts.



# SPM16-02 SIGNAL POST MANIPULATOR







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## KEY FACTS

The SPM16-02 Signal Post Manipulator will handle round steel sections from 100mm (4in) to 450mm (17.75in) diameter and weighing up to 2,250kg (5,000lb) making it ideal for installing pre-built signal post assemblies.

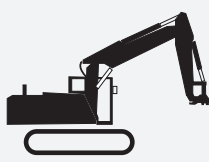
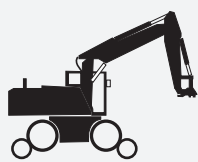
A broad range of adapter systems are available for use with truck cranes, excavators, front-loaders and tele-handlers and this range includes built-in tilt rotator heads.

Like all Thomson attachments, the SPM16-02 is fitted with pressure control valves to ensure compatibility with any host machine and a pendulum valve can be specified which locks the jaws as the post is erected.

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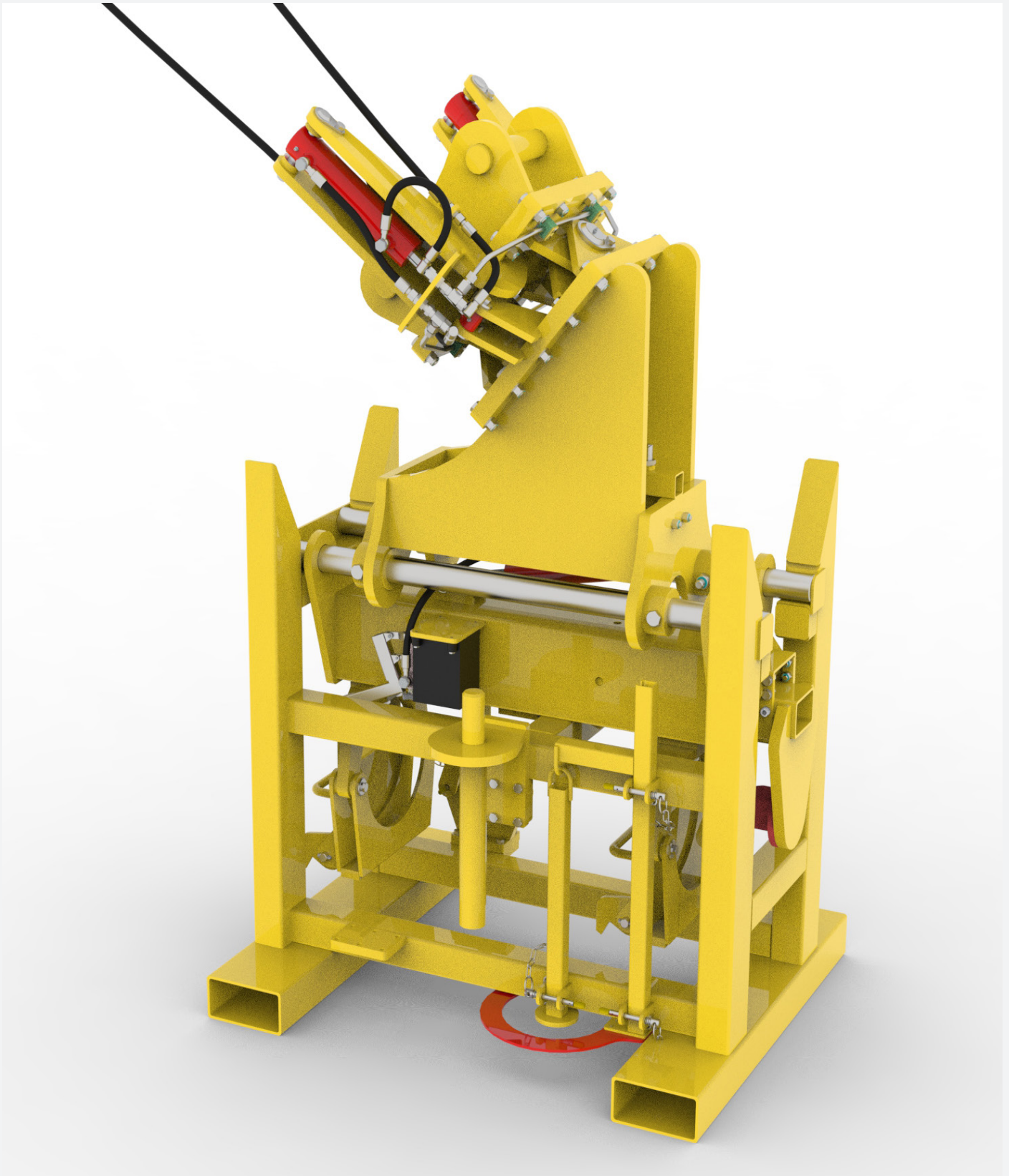
## OPTIONS

For square, beam and fabricated sections the SM15 Steelwork Manipulators unique four-way grip system is an ideal solution.





## SPL16-02 STOVEPIPE LIFTER





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## KEY FACTS

The unique design of the SPL16-02 Stovepipe Lifter allows it to carry the weight of complex cantilever and stovepipe assemblies whilst not restricting their movement.

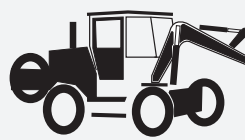
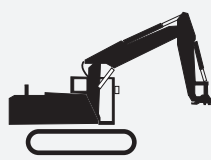
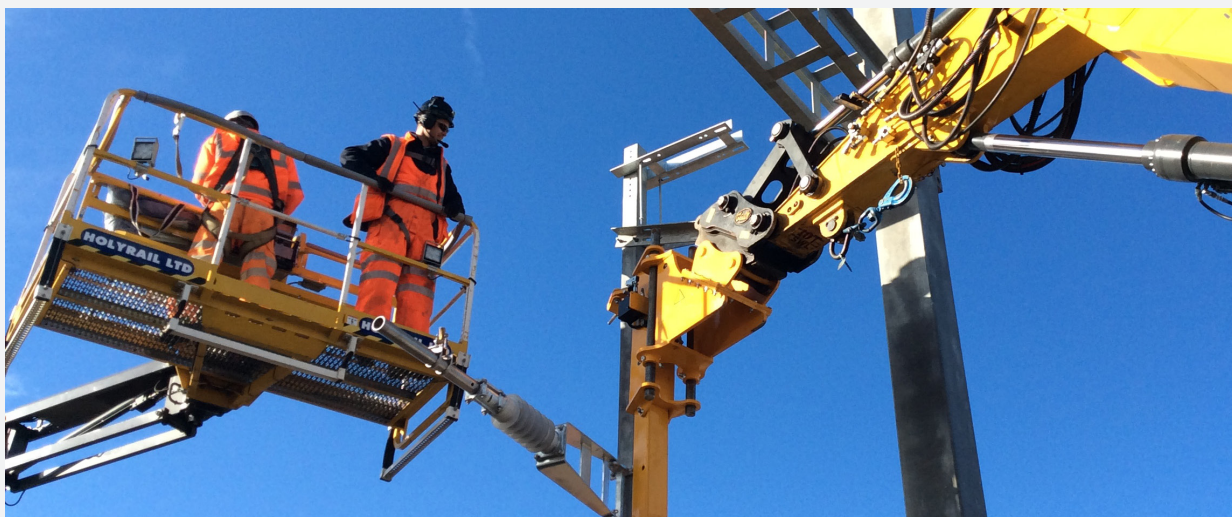
A hand operated hydraulic system allows workers in the MEWP basket to raise and lower the assembly by up to 200mm (8") for fine adjustment.

With the weight safely supported aligning and fixing the assembly becomes much easier and significantly safer. The device is supplied in its own storage / transport stillage.

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## ALTERNATIVE PRODUCTS

A wide variety of configurations and accessories are available to suit all steelwork types and sizes.





# CABLE YOKES







## KEY FACTS

Where possible it is advantageous to move the drum as cable is dispensed and Thomson Cable Yokes offer a fast and versatile way of doing this.

The shaft is fitted through the drum and locked in place using the tapered collars to centre the shaft in the drum.

The drum and shaft can then be picked up by the yoke and it is a simple matter to draw the cable from the drum as the machine moves along the site.

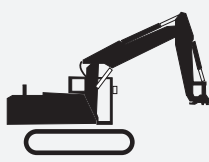
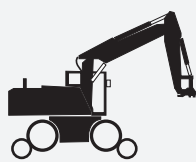
Cable yokes are available in a wide range of sized and attachment configurations to suit all applications and find favour in both rail and civil construction work.

## OPTIONS

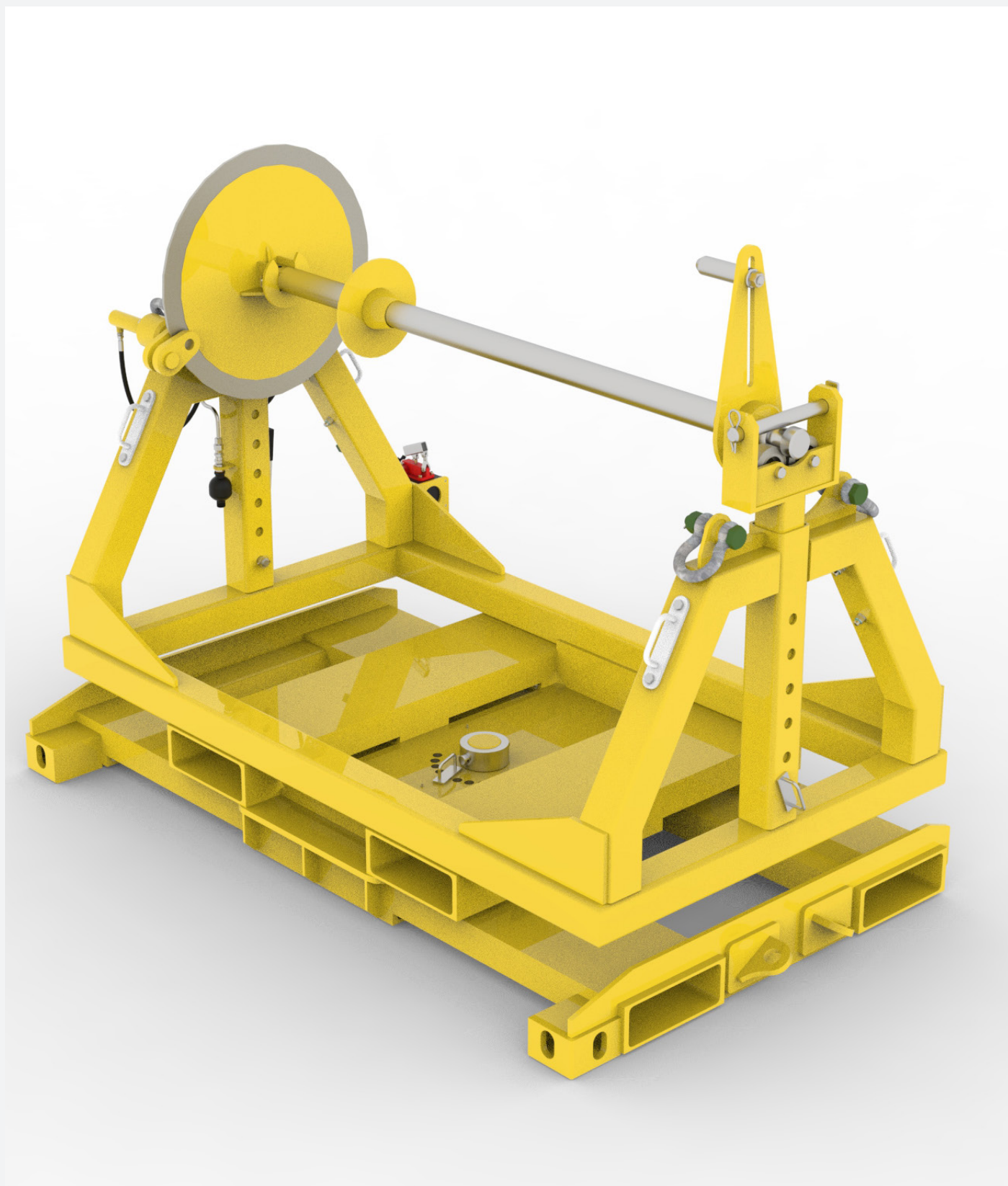
Any size and capacity can be produced.

Shackle, twin-shackle, swivel and hydraulic rotator options with a full range of adapter heads can be produced.

Models with capacities over 5,000kg are equipped with folding support legs for transport.



# CABLE DRUM STANDS







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## KEY FACTS

Thomson Cable drum stands can be used as static supports for drums but are primarily designed to be mounted on vehicles for the swift delivery of all cable types.

The unique low-friction mounting of the drum shaft means that these can even be used for handling delicate cables such as optical fibre.

For the heaviest drums, models are available with adjustable stand widths to keep the stresses on the shafts as low as possible.

All types feature fork pockets for easy handling and swivel bases to set the drum at an angle to the vehicle for easier delivery to the track or road-side.

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## OPTIONS

Disc brake, power drive and hand-operated re-wind systems.

Hand pumped hydraulic control of slew functions.

A variety of weight and size capacities are available.

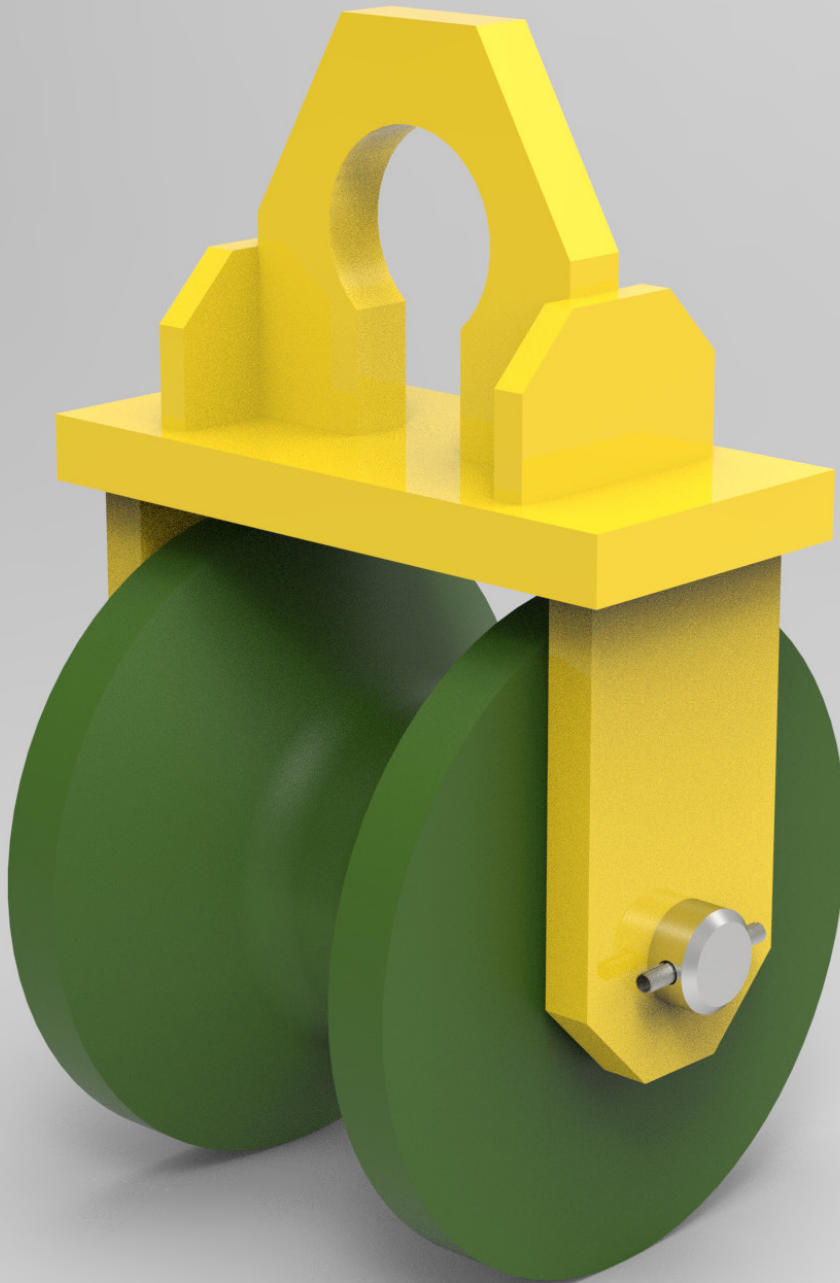
Base dimensions and configurations can be varied to suit all vehicle and wagon types.

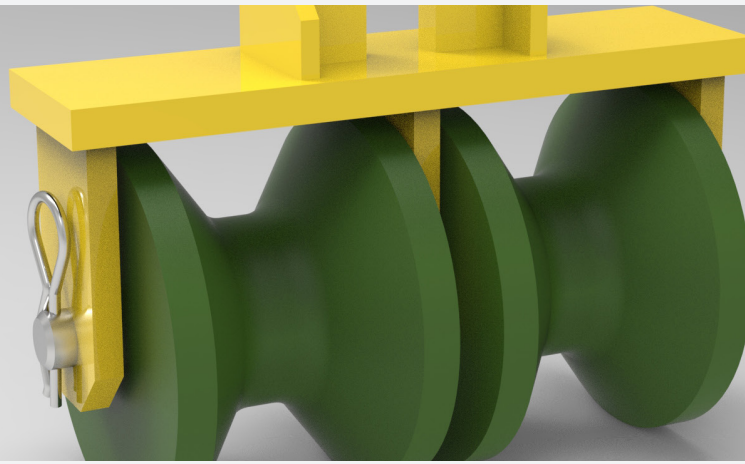
ISO twist lock corner blocks can be specified for mounting on intermodal vehicles.





# CABLE THIMBLES





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## KEY FACTS

When using Cable Drum Stands to pay off cables as shown at the top of Page 25 a Cable Thimble suspended from the excavator boom is a simple way to prevent cable rubbing on the ground as it is fed into the lineside troughing.

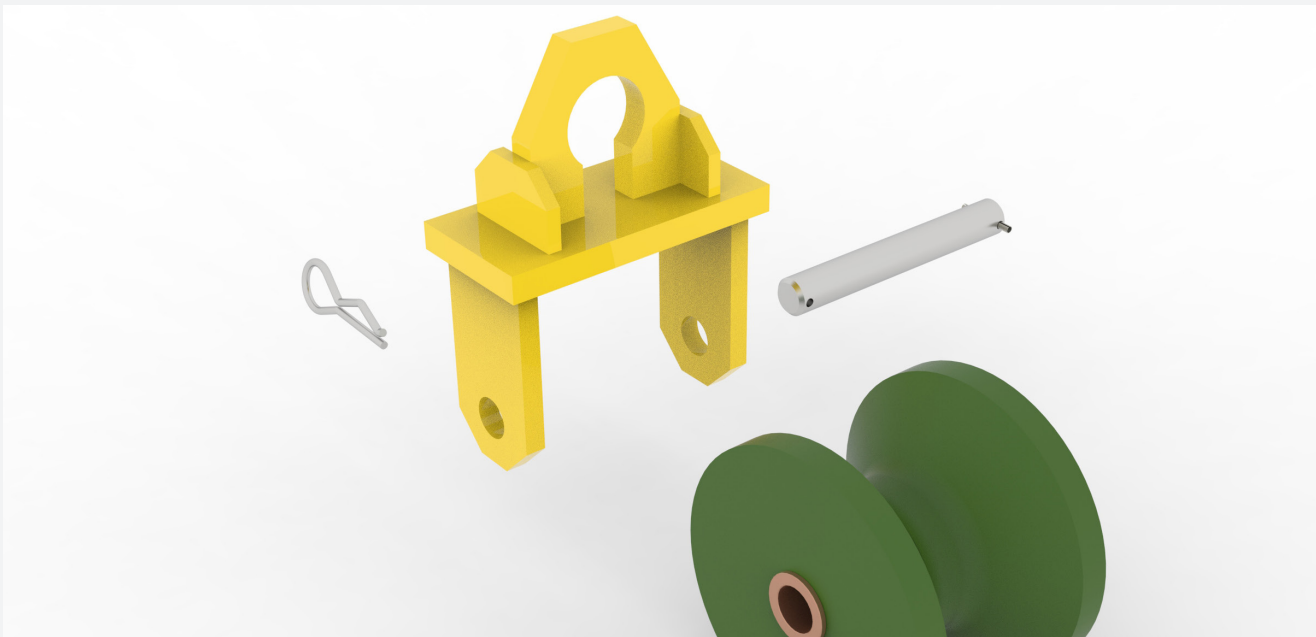
Cable Thimbles have smooth urethane or nylon rollers which turn on bronze bearings to carefully guide the cable without risk of damage to the cable surface.

To release the Thimble the centre shaft can be easily removed.

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## OPTIONS

Single, dual and triple roller Cable Thimbles are available.



# STATIC DRUM HANDLERS







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## KEY FACTS

Where cable is to be drawn from a static drum, Thomson Drum Handlers can be configured with a range of features to make the task as easy as possible.

All Drum Handlers feature our unique low-friction shaft mounting system for handling delicate cables but a wealth of other features are available.

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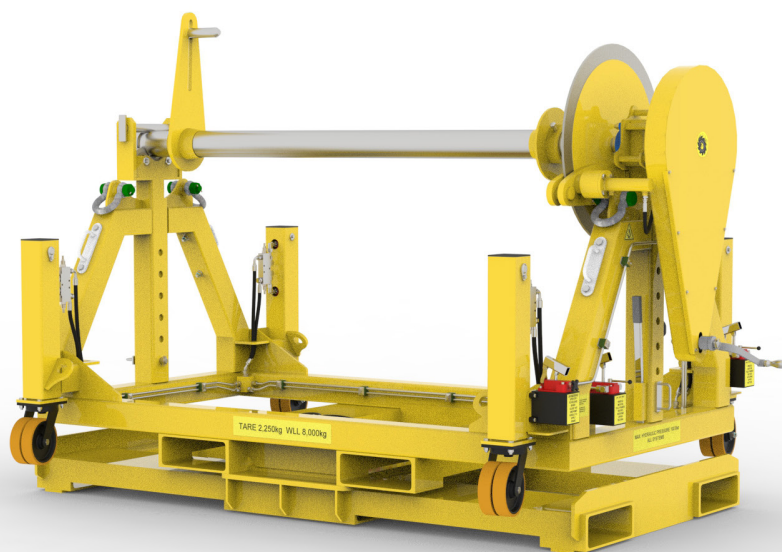
## OPTIONS

As well as pay-off brakes for tensioning cables, hand re-winding mechanisms, hydraulic adjustment of slew and hydraulic deployment of castor wheels are just some of the options.

Spreader beams capable of lifting the Drum Handler - empty or laden - are available as accessories.

Power drive systems with electric or diesel motors are also available.

Each system is built to order to suit your individual requirements.



# KM18-02 CABLE THREADER





## KEY FACTS

The KM18-02 Cable Threader is a rapid solution to cable pulling around obstacles such as catenary stanchions and gantries.

Originally designed for threading replacement catenary wire this device is equally at home running earth and power cables around upright posts and similar obstructions.

Cable is normally drawn as shown above using the back arm to hold the needle. When the needle has passed over or through the obstacle the front arm grips the needle and the rear arm is lowered. The needle and the attached cable can now continue on their journey and, once clear of the structure the rear arm grips the needle again and the front retracts ready for the next obstacle.

Three attachment points are provided allowing the machine to be configured for a variety of different layouts.





Contact us today to  
learn how we are  
revolutionising global  
rail operations with  
innovative solutions.



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