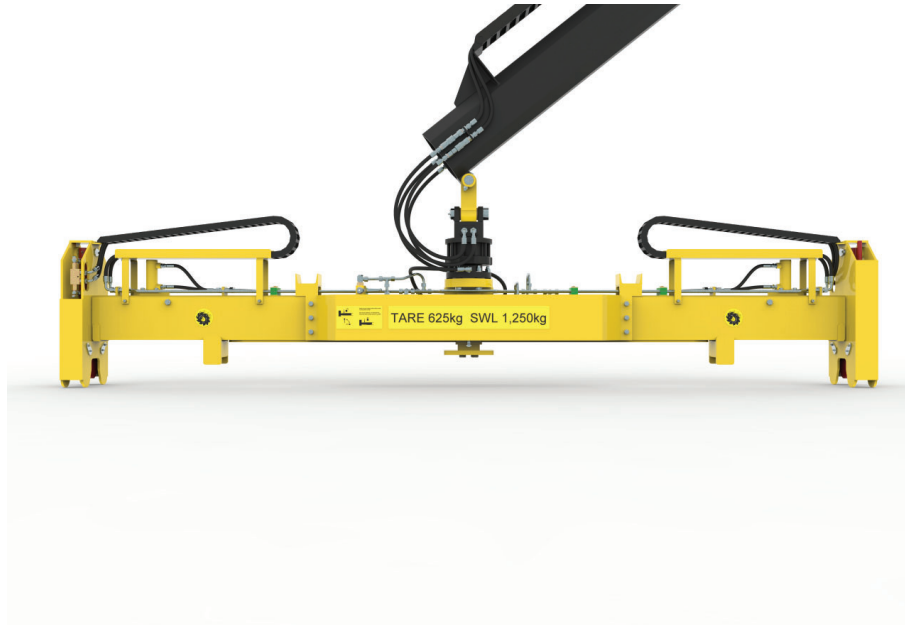


# TRLB20 TELESCOPIC RAIL BEAM Specifications



Technical Details and Specifications  
for the  
Thomson Engineering Design  
TRLB20-I5  
and  
TRLB20-I6  
Manually and Hydraulically Telescoping  
Rail Beams

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# Introduction

*The Thomson Engineering Design TRLB20 Telescopic Rail Beam was originally designed in 2006 to a specification developed by Network Rail.*

Since then the TRLB20 manually telescoping beam has become the UK industry standard beam for handling running rails up to 60ft long.

Over the next few years a number of components used in the original design became obsolete and in 2015 a complete design review was carried out. Since then the manual version of the beam has been designated the TRLB20-15 and the beam may now be specified for handling either running rails or conductor rails.

In 2016 a hydraulically telescoping version was added to the range, designated the TRLB20-16. Standard beams are designed for handling running rails only but each type may now be specified for handling grooved running rails as well.

This document provides full specifications of the TRLB20 series and illustrates their key features.

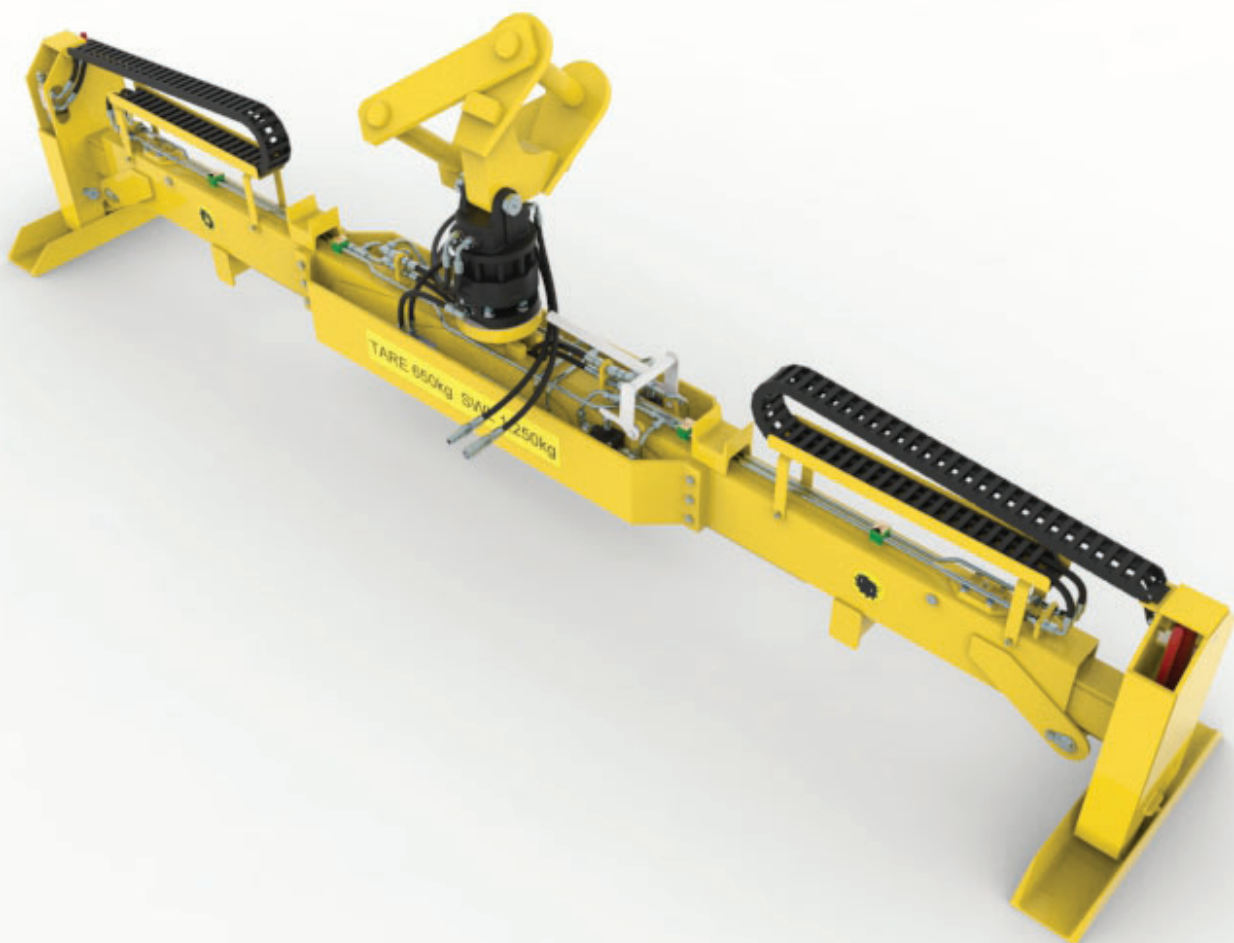
All beams in the TRLB20 series incorporate a safety valve system which prevents the beam jaws opening whilst supporting the weight of a rail, a pressure reducing valve allowing the beams to be used with almost any host machine and pilot operated check valves on the beam cylinders to protect against hose failure.

The Thomson TRLB20 remains the UK industry standard beam for rail handling and is a popular fitment on both delivery crane trucks and Road Rail Vehicles.



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# TRLB20-15 Manually Telescoping Beam

**The Thomson TRLB20 Rail Beam is a robust unit designed for long-term heavy-duty use. Its hydraulic system incorporates a parachute valve device to lock the jaws when the beam is lifted and other features to meet the most stringent safety requirements.**

A 6,000kg capacity hydraulic rotator is used to provide the high torque required to slew long rail lengths. The high capacity of this rotator helps to ensure the durability of the beam.

The rotator mount slides up and down a few millimetres within the main frame of the device and this movement is used to operate the spring-loaded parachute valve. When the beam is lifted this valve closes off the connection to the jaw cylinders so that the beam cannot release its load.

To ensure that the beam is compatible with all host machines a precision pressure reducing valve is fitted in the system to limit the pressure in the beam hydraulic system to 150 Bar. The inlet pressure from the host machine can be up to 300 Bar without affecting the pressure in the beam system. As well as preventing overload damage to the structure, this feature significantly improves the life of the cylinders, valves and seals.

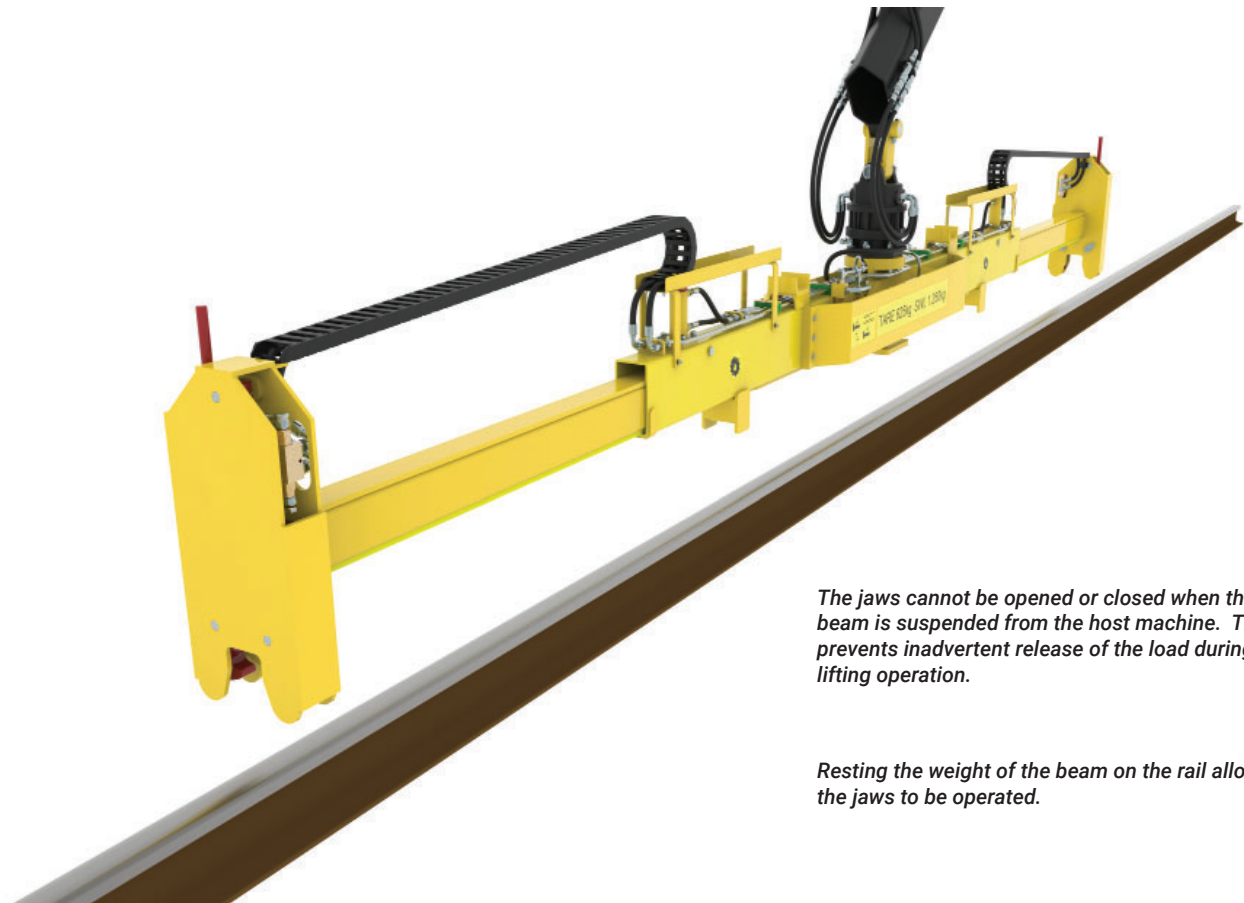
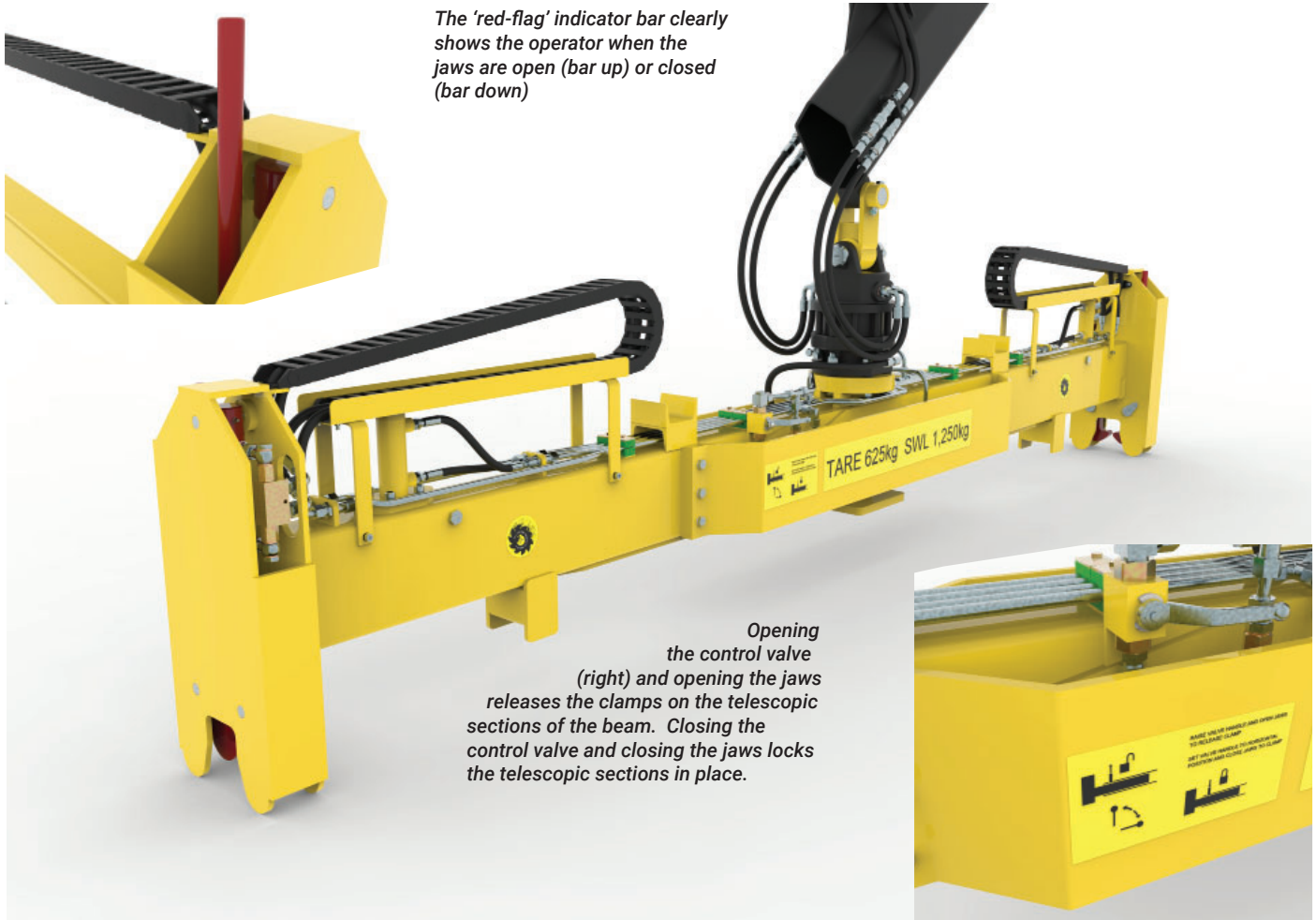
A pilot operated check valve mounted on each jaw cylinder locks the cylinder in the event of a burst hose or failed connection to the host machine.

To minimise the chance of damage the jaws are encased in a heavy steel enclosure. A red painted indicator rod connected directly to the jaw mechanism rises as the jaws are opened to give the operator a clear visual indication of the status of the jaws.

Closing the jaws also activates the hydraulic clamps which lock the telescopic sections in place. To adjust the length of the beam the operator must first open a valve on the beam then open the jaws to release the hydraulic clamps. The length of the beam is then adjusted manually by pulling or pushing on the jaw enclosures.

Once the beam is set to the required length the operator returns the valve to its 'lock' position and closes the jaws to re-activate the clamps.







# TRLB20-I6 Hydraulically Telescoping Beam

**The TRLB20-16 incorporates the same safety features as the TRLB20-15 including the parachute valve system, check valves on the jaw cylinders and pressure control built into the system.**

As with the TRLB20-15, when the beam is lowered the operator can open and close the jaws at the ends of the beam.

When the beam is lifted the same control in the cab of the host machine now controls the load levelling function of the beam or, with a second operator pressing the setting handle, the telescope function.

## Telescope Function (see illustration on Page 7)

To extend or retract the beam the operator lifts it clear of the ground to transfer control to the telescoping cylinders.

A second operative now presses down on the white-painted handle by the rotator to engage the telescope function.

The control in the cab of the host machine is now operated to extend or retract the beam as required. For normal use the beam is first telescoped to approximately half its maximum extension.

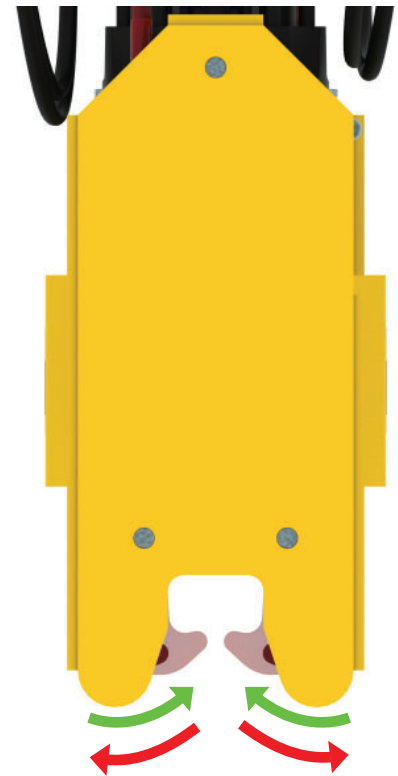
Releasing the white handle re-activates the load levelling function.

## Load Levelling Function (see illustration on Page 7)

Note that the load levelling function will not work if the beam is either fully extended or fully retracted.

With the white handle released and the beam raised clear of the ground the control in the cab of the host machine now allows the operator to compensate for an out-of-balance load (for example if the beam is not at the middle of the rail being lifted).

Operating the control on the host machine now extends one end of the beam whilst simultaneously retracting the other end to 'shift' the load endways and improve the balance.



**When the weight of the beam is resting on the ground or on a length of rail the operator has control of the grab jaws.**



**The white-painted setting handle is pressed down to allow the beam to be extended or retracted.**

**Releasing the setting handle re-activates the load levelling function.**



A TRLB20-16 with a two-pin adapter head for fitting to an excavator quick coupler.

The beam is shown resting on its transport stands.



Telescope Function

If the beam is lifted and setting handle pressed down the operator can extend or retract the beam ends to change the length of the beam using the control which operates the jaws when the beam is lowered.



For normal use the beam is extended approximately half-way. This allows the greatest travel for load levelling.



Load Levelling Function

The load levelling function allows the operator to simultaneously retract one end of the beam and extend the other end to 'shift' the load. This can be used to compensate for an out-of-balance load or to help accurately position rail lengths.

# Adapter Head Options

*The image below shows the most common arrangement for TRLB20 Telescopic Rail Beams: a hydraulic rotator and two-pin adapter head for direct mounting to an excavator quick coupler.*

Many other adapter options are available however and for full details please download the adapter head guide from our website [www.thomsonrail.com](http://www.thomsonrail.com).

Some of the most popular alternative adapter options are shown on page 9.







A variety of adapter heads can be fitted to the rotator including single pin heads for direct connection to an excavator boom (left) and adapters for lorry cranes such as the Palfinger adapter (right).



Our quick change system allows one rotator to be used with multiple attachments.

A square socket is fitted to the beam which engages with the square drive peg on the base of the rotator. Each new attachment only requires the socket in order to be fully integrated with the host machine.

Quick change system parts and rotator are rated to 10,000kg working load and the rotator may be adapted to fit excavators and truck cranes.



If only one hydraulic service is available on the host machine the low headroom adapter head (left) can be fitted instead of the rotator but must be suspended from a swivel hook on the host machine.

The swivel head (right) may be used with either a swivel or fixed hook.

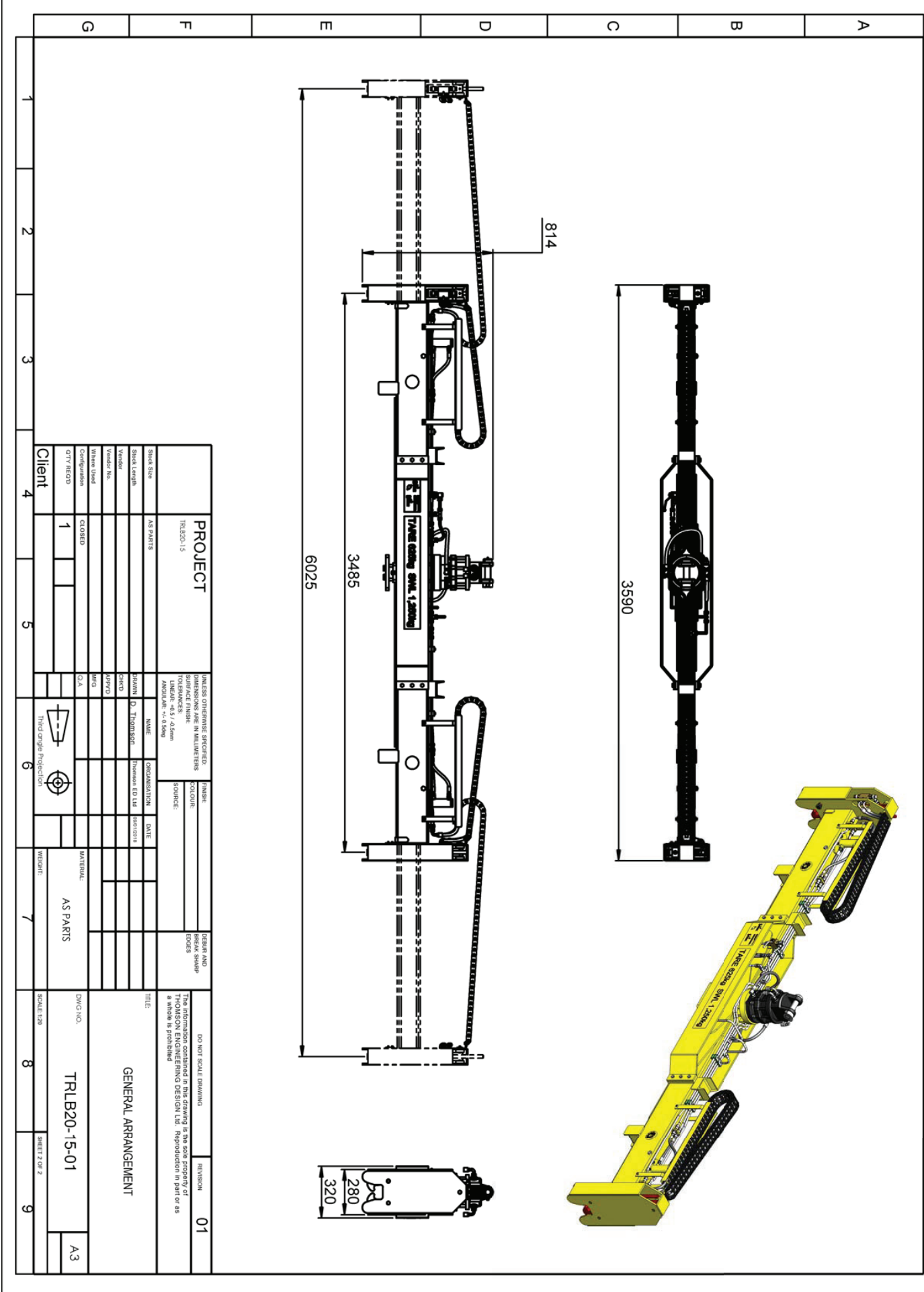


# TRLB20-15 with Rotator and Truck Crane Adapter





TRLB20-16 with Rotator and Two-Pin Adapter Head







# Specifications

## Performance

Tare Weight (typical)	650	kg	1,430	lbs
Safe Working Load (WLL)	1,250	kg	2,750	lbs
Beam Force per Jaw	5	kN	1,100	lbs
Rail Compatibility (standard)			Running Rails	
Rail Compatibility (optional)			Running & Grooved Rails	
Max. Rail Length	18	m	60	ft
Min. Rail Length	4	m	13	ft

## Rotator

Rotator Capacity	6,000	kg	13,200	lbs
Rotator Torque (at 250 Bar)	1,800	Nm	1,300	ft lb
Rotation			Full 360 degree continuous	
Rotator Top Pin Diameter	35	mm	1.375	in

## Key Dimensions

Jaw Cover Width	280	mm	11	in
Overall Height	814	mm	32	in
Overall Width	320	mm	12.6	in
Overall Length (20-15 min.)	3,590	mm	11 ft	9.5 in
Overall Length (20-16 min.)	3,810	mm	12 ft	6 in

## Hydraulic System Data

System Pressure	150	Bar	2,175	psi
Max. Hydraulic Supply Pressure	300	Bar	4,350	psi
Min. Hydraulic Supply Pressure	90	Bar	1,300	psi
Max. Pressure to Rotate Function	250	Bar	3,625	psi

# Contact Details

**A**ll technical and sales enquiries should be directed to Thomson Engineering Design.

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## PLEASE NOTE

Whilst every care is taken to ensure that the contents of this document are true and accurate, the specifications of our products and the scope of our services are constantly changing as part of our policy of continuous improvement.

We strongly recommend contacting the factory to ensure that details given are still current.

More than half our business comes from special products designed and built as one-offs and we are always pleased to discuss amended specifications should the product detailed here not meet your exact requirements.



