

# 6x4-20-02 SLEEPER HANDLER

## Specifications



Technical details and specifications for the Thomson  
Engineering Design 6X4-Sleeper Handling Grab

Issue 1

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# Introduction

*The Thomson Engineering Design 6X4 Sleeper Handling Grab has been designed for handling concrete sleepers of varying length and depth.*

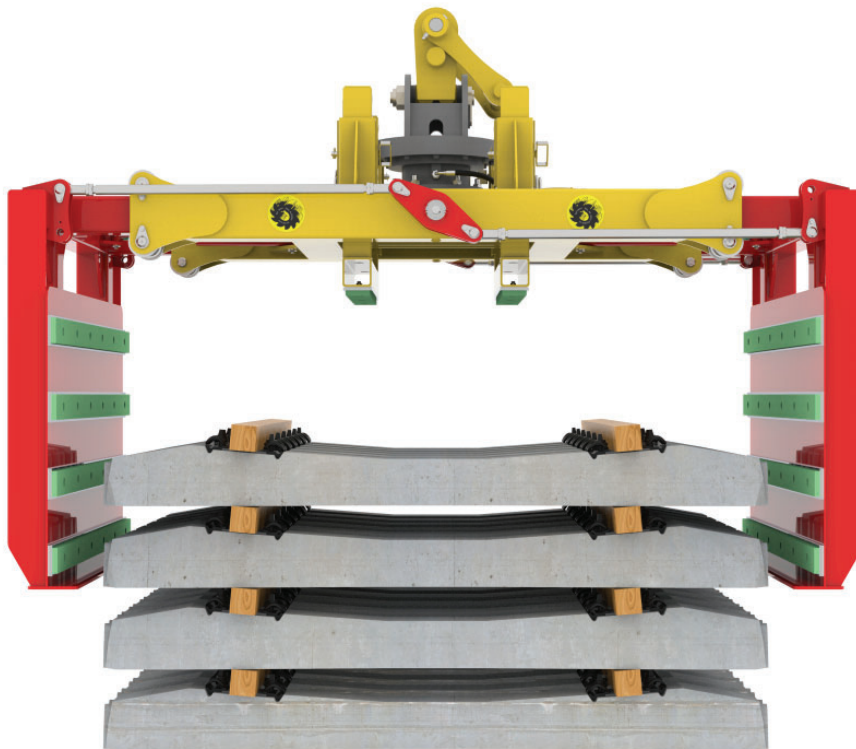
In order to accommodate varied sleeper sizes the grab features sliding jaws mounted on steel rollers.

Two hydraulic cylinders on each side of the device move the jaws and this movement is synchronised to ensure that the load is always balanced. Each cylinder is fitted with an over centre check valve to protect against hydraulic hose failure or leakage within the connections to the host machine.

Replaceable urethane coated pads are fitted to the contact faces of the jaws and to the support frame. These durable pads allow the grab to exert a high grip force on the sleepers without risk of damage to the concrete surfaces.

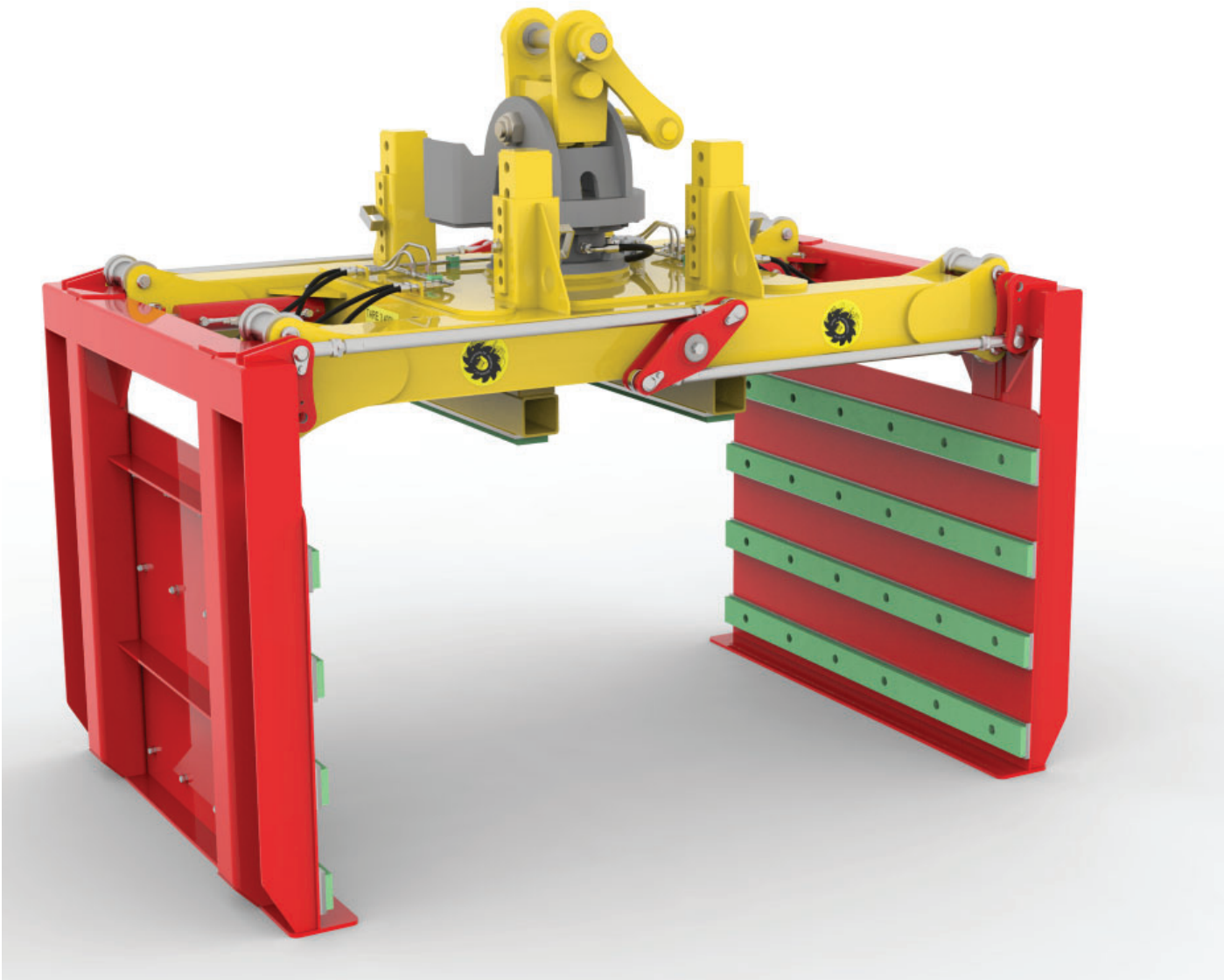
A steel plate below the sleeper ends further secures the sleepers in the event of inadequate pressure from the host machine.

The 6X4 Sleeper Handler has been designed by Thomson Engineering Design who have been designing and building rail and sleeper handling attachments since 1999 and have held ISO9001 accreditation for design and manufacture since 2007.



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# Key Features

**The Thomson 6X4 Sleeper Handler has been designed for long-term heavy-duty use. Its hydraulic system incorporates a pressure control system and over centre valves on the grip cylinders to meet the most stringent safety requirements.**

A 20,000kg capacity hydraulic rotator is used to provide the high torque required to slew the twin layers of sleepers. The high capacity of this rotator helps to ensure the durability of the product.

The rotator adapter head is custom made to suit any host machine and incorporates twin hinges to allow the Sleeper Handler to swing freely below the boom of the host machine.

To ensure that the Sleeper Handler is compatible with all host machines a precision pressure reducing valve is fitted in the system to limit the pressure in the Grab hydraulic system to 140 Bar. The inlet pressure from the host machine can be up to 300 Bar without affecting the pressure in the Handler system.

As well as preventing overload damage to the structure, this feature significantly improves the life of the cylinders, valves and seals.

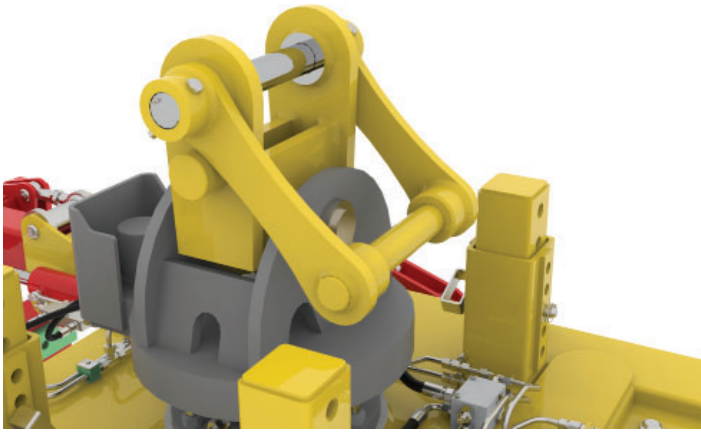
An over centre valve mounted on each jaw cylinder locks the cylinder in the event of a burst hose or failed connection to the host machine.

To minimise the chance of accidental damage to the device, the jaws are of heavy gauge steel and are of fully welded construction.

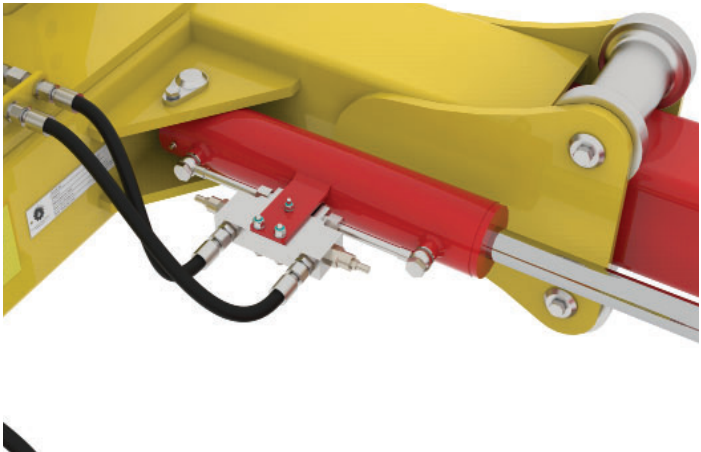
Each jaw has a total travel of 300mm allowing the device to accommodate a wide range of sleeper types.

Different sleeper depths and dunnage sizes are accommodated by adjusting the upper pad positions.



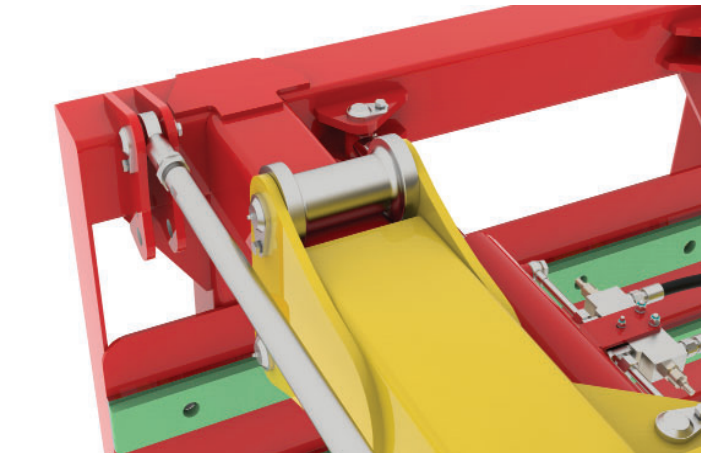


Adapter heads include two perpendicular hinges to ensure that the Sleeper Handler hangs freely below the boom of the host machine.



Cylinders are fitted with over centre valves to protect against leakage or hose failure.

Cylinders are rated for 210 Bar service pressure. The lower system pressure set by the pressure reducing valve (140 Bar) helps to minimise wear on seals.



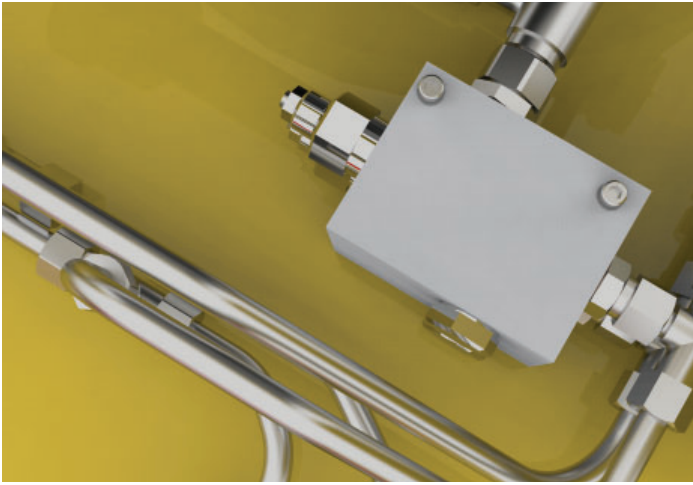
Steel rollers in the slider mechanism ensure free running.



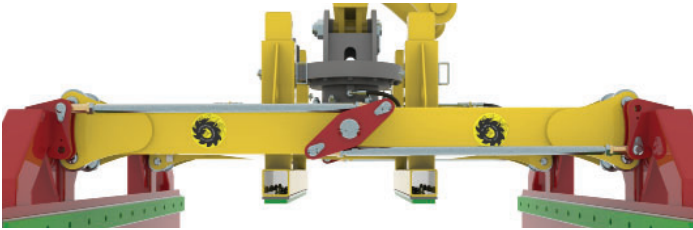
Replaceable urethane pads on all contact surfaces protect sleepers from damage.

The pads which rest on the top of the sleepers can be raised or lowered to accommodate different sleeper depths.

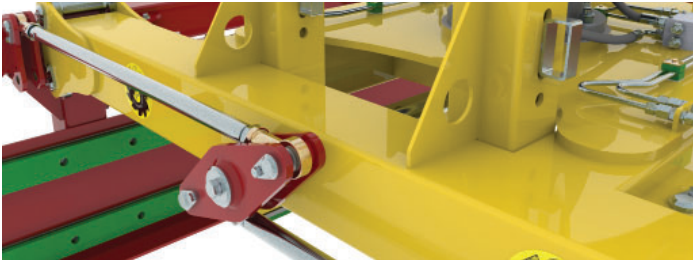




Pressure reducing valve ensures system is protected against overload from the host machine system.



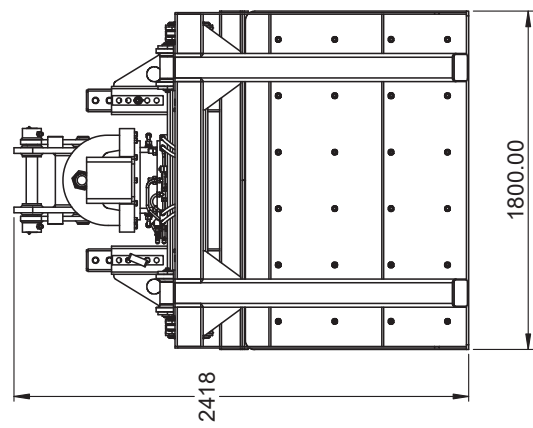
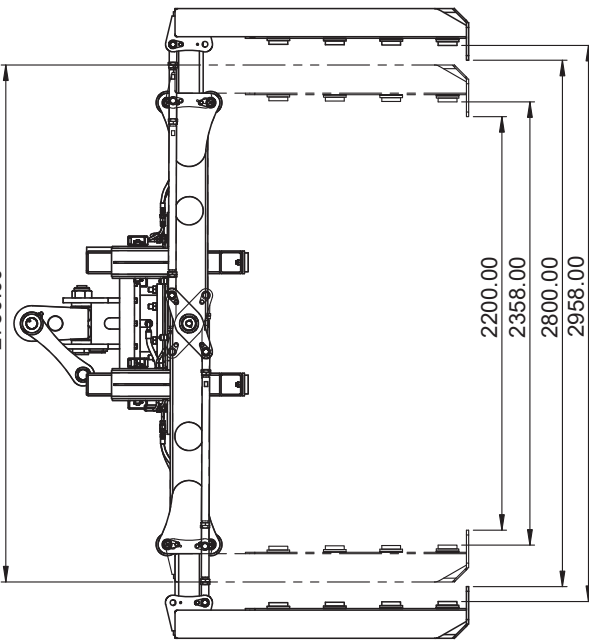
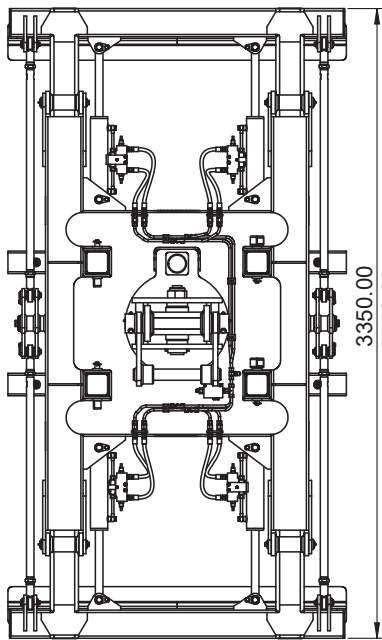
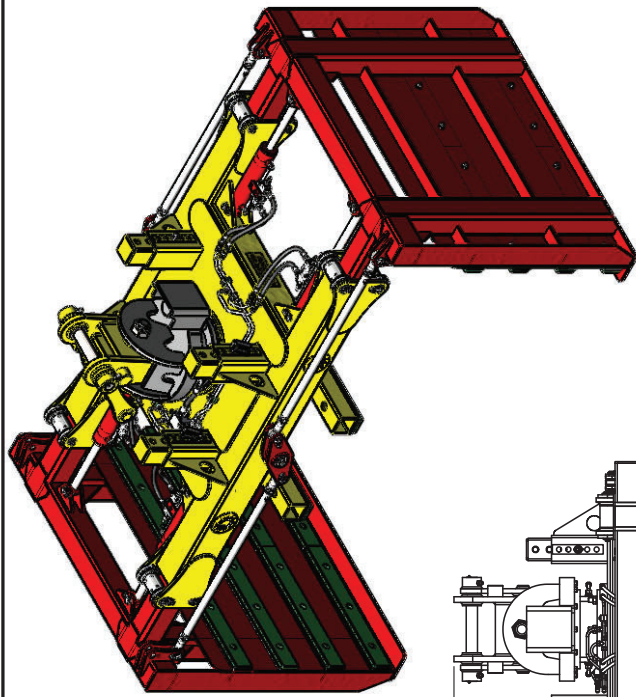
Synchronising mechanism ensures both jaws open and close together to maintain the balance of the device at all times.



All moving parts can be greased to minimise wear.



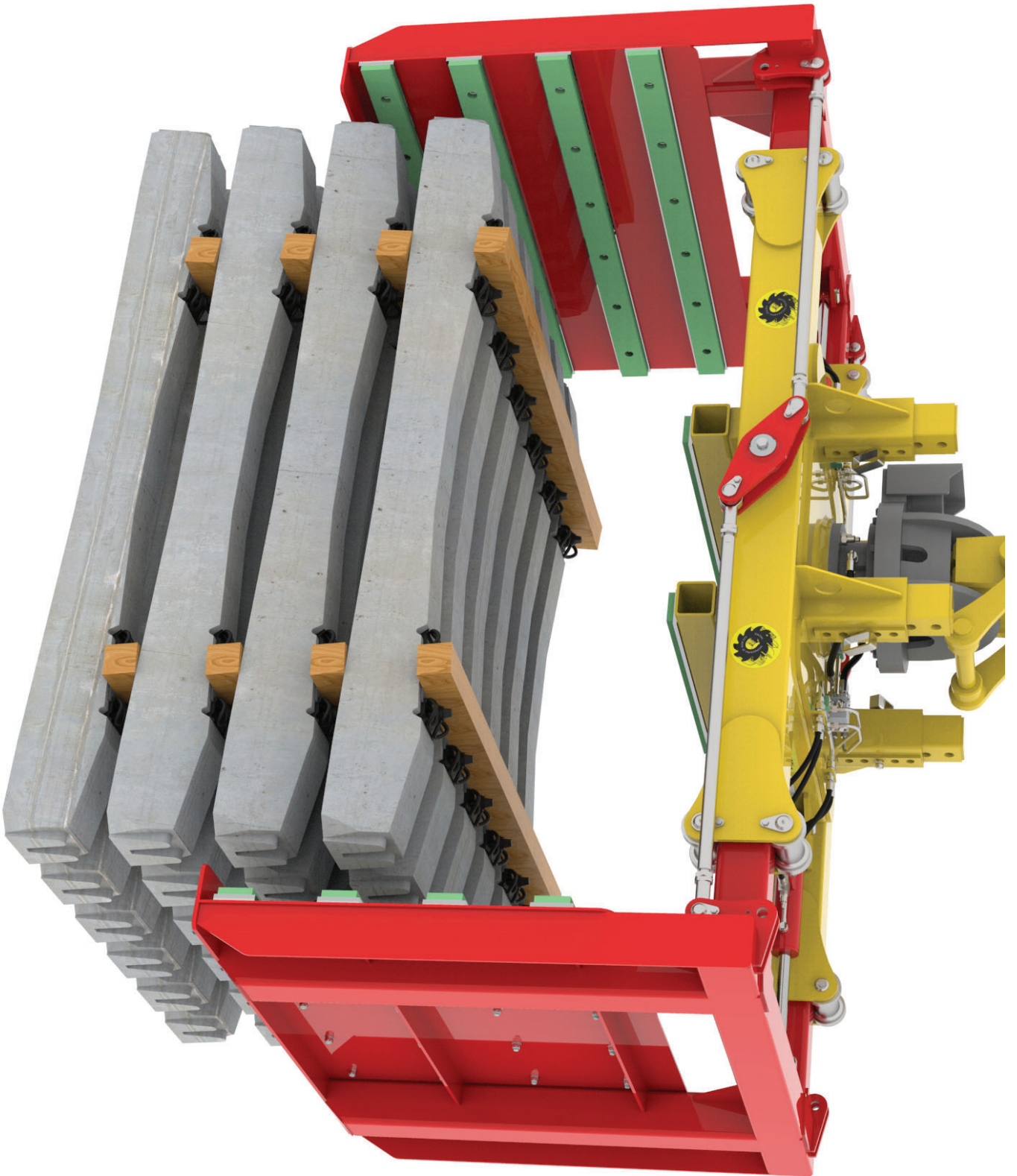
Wide jaw opening makes it easy for the operator to grab and release sleepers and minimises risk of striking sleepers.



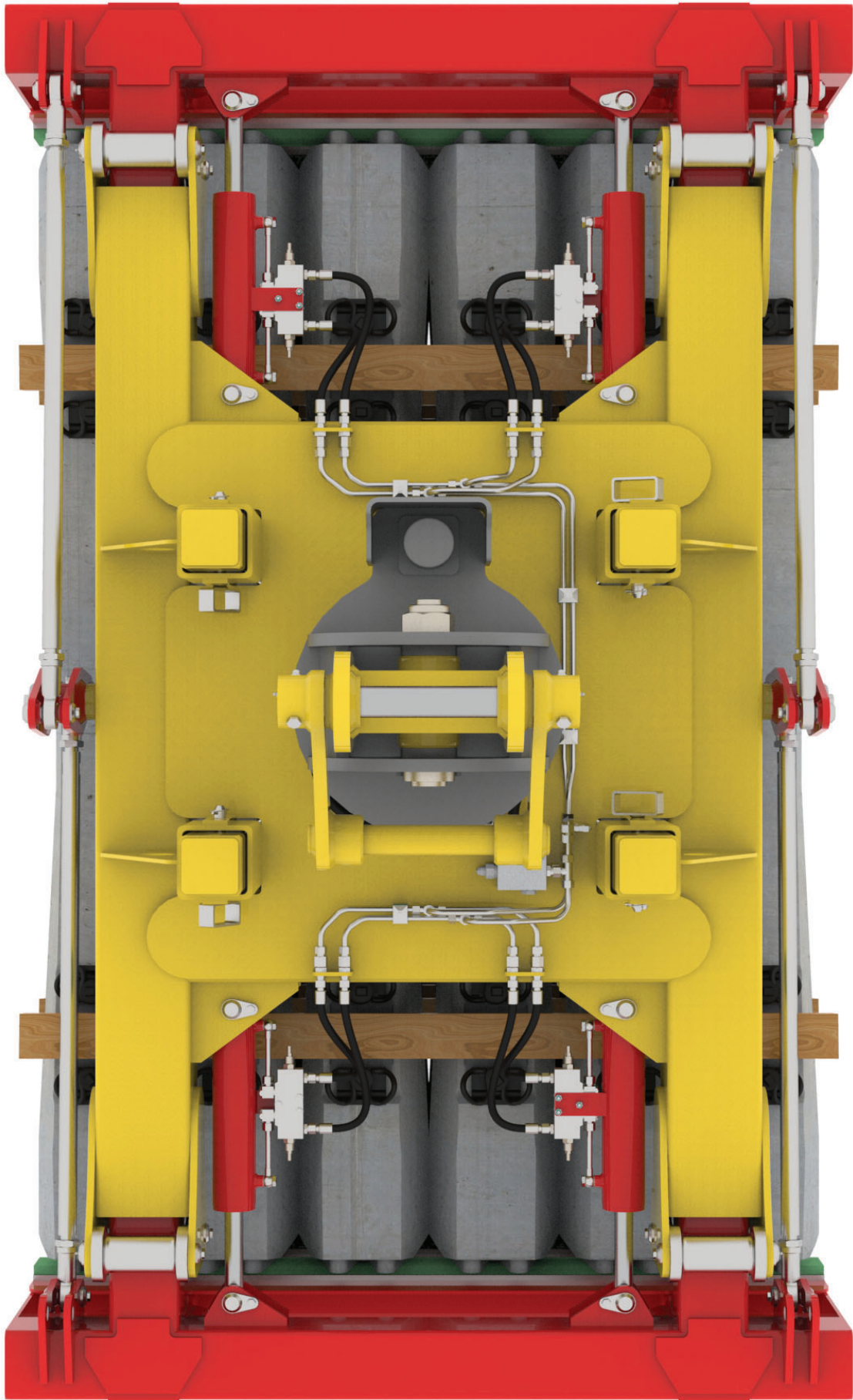
A B C

D E

PROJECT 6 X 4 SLEEPER PACK GRAB		FINISH: AS PARTS		DO NOT SCALE DRAWING		REVISION 01	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS IN MILLIMETRES		COLOUR: AS PARTS		The information contained in this drawing is the sole property of THOMSON ENGINEERING DESIGN LTD. Reproduction in part or as a whole is prohibited			
SURFACE FINISH: LINEAR +/-0.1 / +/-0.2mm ANGULAR +/-0.1deg		SOURCE:		DEBR AND SHARP EDGES		TITLE: GRAB ASSEMBLY	
Stock Size	NAME	ORGANISATION	DATE	DRAWN		DWC NO. 6X4-20-02-01	
Stock Length	D. THOMSON	Thomson ED Ltd	23/02/2018	CHECKED		SCALE: 1:25	
Vendor				APPROVED		SHEETS OF 5	
Vendor No.				MFG		8	
Where Used				G.A.		9	
Configuration	OPEN			MATERIAL:		WEIGHT:	
CITY/REQD	1			Third angle Projection		A3	
Client	THOMSON ENGINEERING DESIGN LTD					A3	







# Specifications

## Performance

Tare Weight (typical)	3,400	kg	7,480	lbs
Safe Working Load (WLL)	8,500	kg	18,700	lbs
Grip Force per Jaw	105.5	kN	23,600	lbs
Urethane Pad Depth	100	mm	4	in
Max. Jaw Opening	2,800	mm	110	in
Min. Sleeper Length	2,390	mm	94	in

## Rotator

Rotator Capacity	20,000	kg	44,000	lbs
Rotator Manufacturer			Minelli	
Rotation			Full 360 degree	continuous
Rotator Top Pin Diameter	70	mm	2.76	in

## Key Dimensions

Jaw Travel (per side)	300	mm	11.8	in
Overall Height (typ. adapter head)	2,418	mm	95	in
Overall Width	1,800	mm	71	in
Overall Length (jaws closed)	2,750	mm	108	in

## Hydraulic System Data

System Pressure	140	Bar	1,950	psi
Minimum Rating of Components	210	Bar	2,940	psi
Max. Hydraulic Supply Pressure	300	Bar	4,350	psi
Min. Hydraulic Supply Pressure	90	Bar	1,300	psi
Max. Pressure to Rotate Function	160	Bar	2,240	psi

# Contact Details

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              [technical@thomsondesignuk.com](mailto:technical@thomsondesignuk.com)**

## 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-off's and we are always pleased to discuss amended specifications should the product detailed here not meet your exact requirements.

