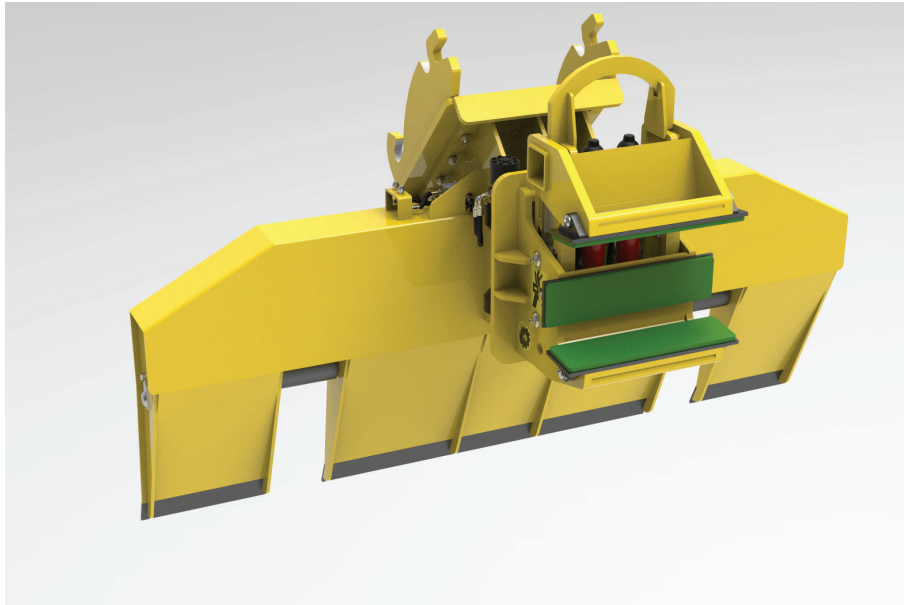


SCI9-O1 SLEEPER CHANGER Specifications



**Sleeper changing attachment incorporating the
proven Thomson Sleeper Manipulator**

Issue 1

March 2019

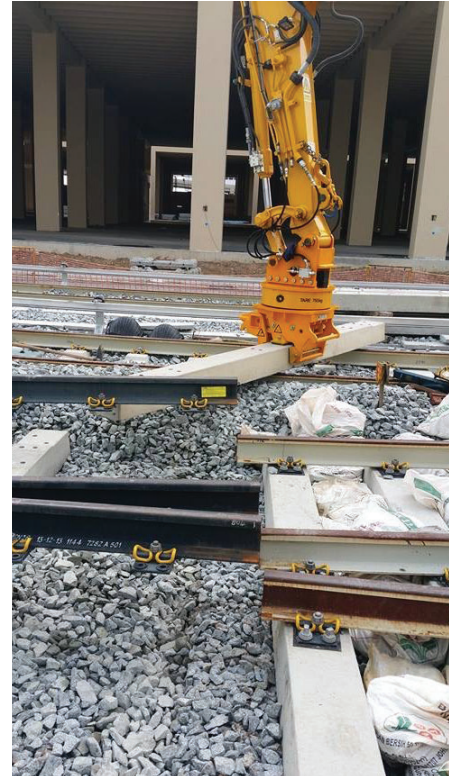
Introduction

The SC19-01 Sleeper Changer is an excavator attachment designed for replacing sleepers and long bearers.

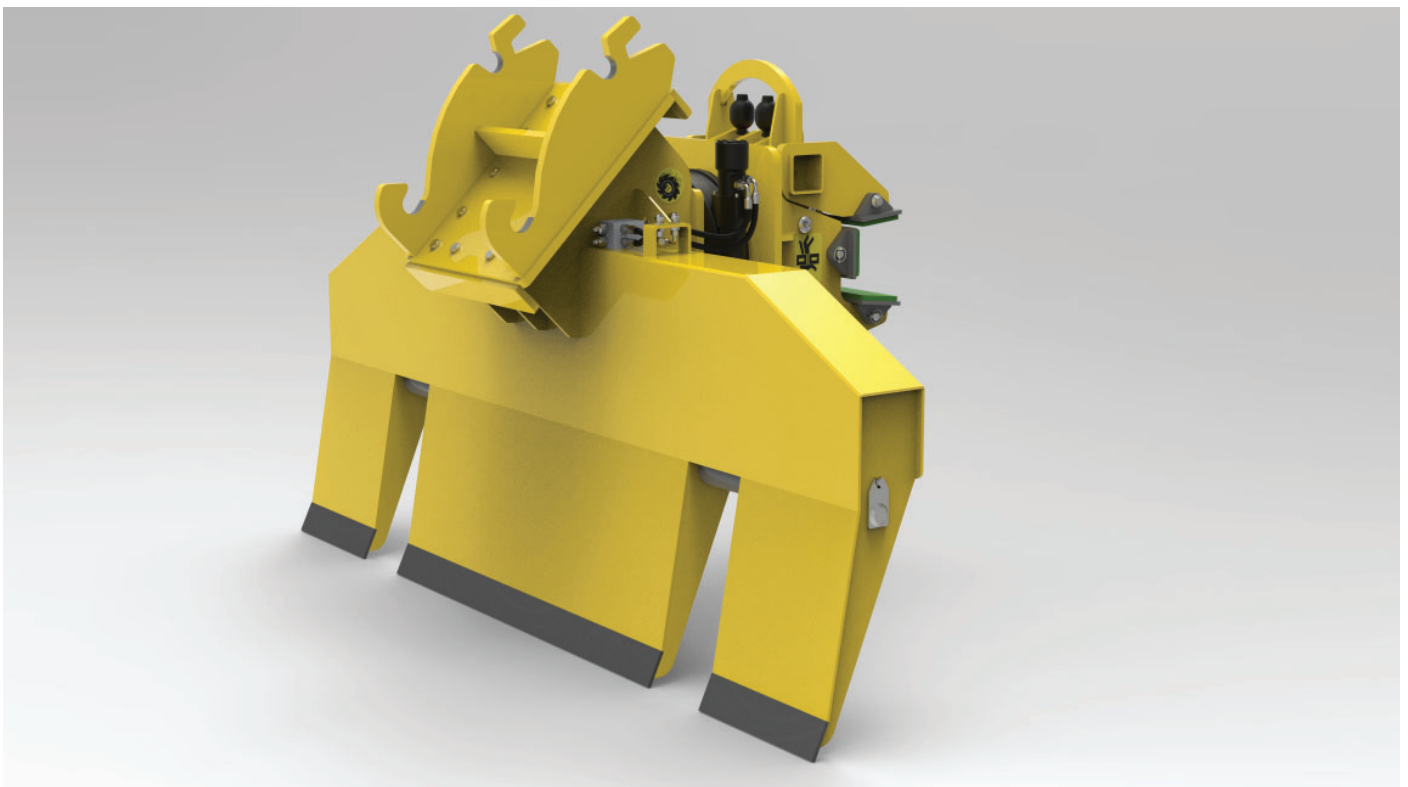
This device incorporates a digging blade used to clear ballast from between the sleepers and a sleeper manipulator which can be used to move, turn and handle the sleepers eliminating the need for heavy manual work.

Developed from our proven and successful SM12 Sleeper Manipulator, which has been in production for seven years, the manipulator on the SC19-01 Sleeper Changer embodies the unique features of that product including replaceable grip pads with Urethane coating for concrete sleepers, steel faces for steel sleepers or patterned steel faces for gripping wooden sleepers.

In the SC19-01 Sleeper Changer the chain drive rotor of the SM12 has been replaced with a heavy duty worm-drive unit which is more compact giving the operator even better control of the sleepers and even more torque to help release old sleepers from the track bed.



SM12 Sleeper Manipulator at work changing long bearers on the Singapore Mass Rapid Transport network



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Issue Record

First Issue	March 2019
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Key Features

COMPACT LINEAR GRAB

The grab has been kept as close to the attachment point as possible to give the operator the best control over the sleeper position when installing new sleepers.

Three sleeper gripping pads - two to grasp the sides of the sleeper and one resting on the sleeper top surface prevent damage to the sleeper.

Urethane coated pads are used for handling concrete sleepers and special pads can also be supplied for handling timber or steel sleepers if required.

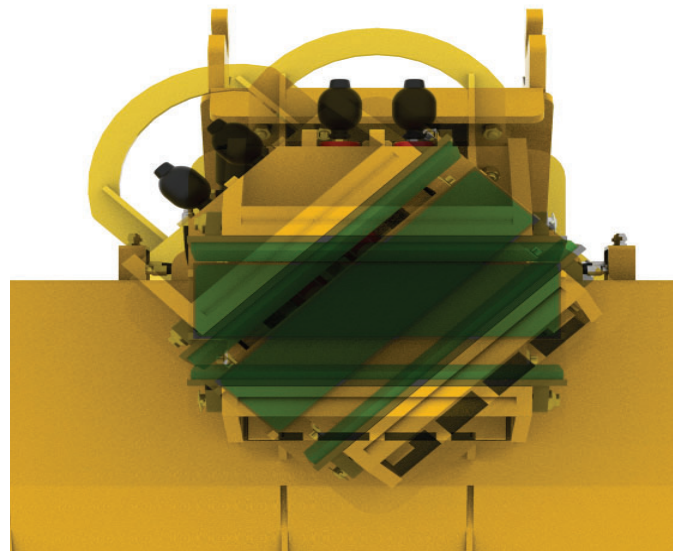
Pads are held in place by simple pins which makes changing the pads an easy operation.



CONTINUOUS WORM DRIVE ROTATOR

The heavy duty worm-drive rotator has high output torque and low speed operation for fine control of the sleeper alignment.

The manipulator can be rotated to any angle or even continuously rotated thanks to the rotary hydraulic coupling at its centre,



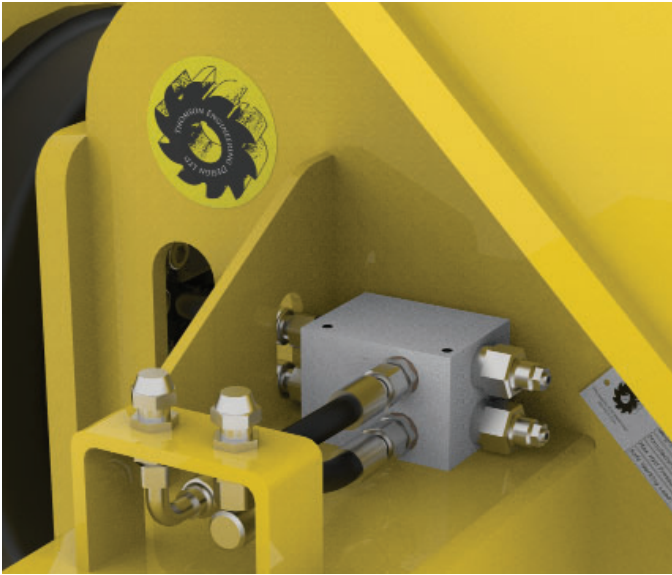
CYLINDERS WITH ACCUMULATORS

In line with the very latest thinking on grab safety the cylinders of the SC19-01 Sleeper Changer are fitted with hydraulic accumulators.

These help to maintain the grab force applied to the load, guarding against leakage in any other part of the system - including leakage in the valves on the excavator.

In tests, this system has been shown to retain a load up to thirty times as long as a grab not fitted with accumulators when attached to older excavators.



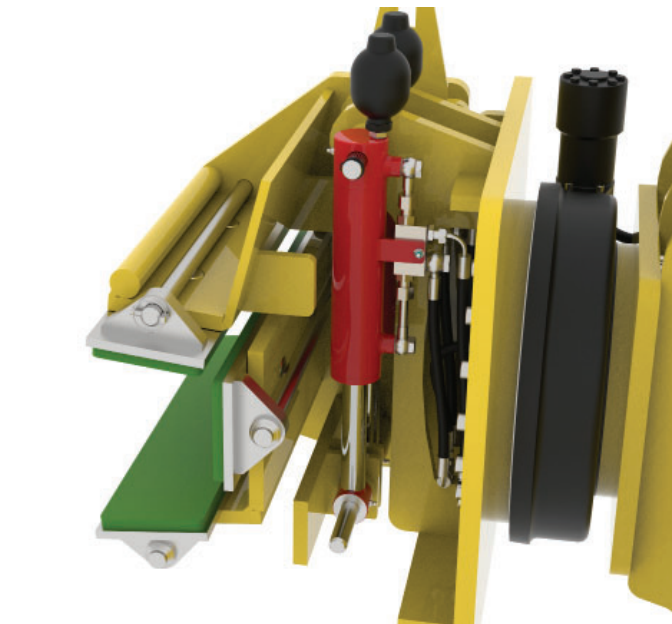


BUILT IN PRESSURE CONTROL

Both hydraulic systems - the rotate and the grab functions - incorporate pressure reducing valves allowing the SC19-01 Sleeper Changer to be fitted to any excavator without having to adjust the excavator system pressures.

These valves are pre-set at the factory to ensure that neither function can ever be overloaded and this significantly increases the life of the hydraulic components.

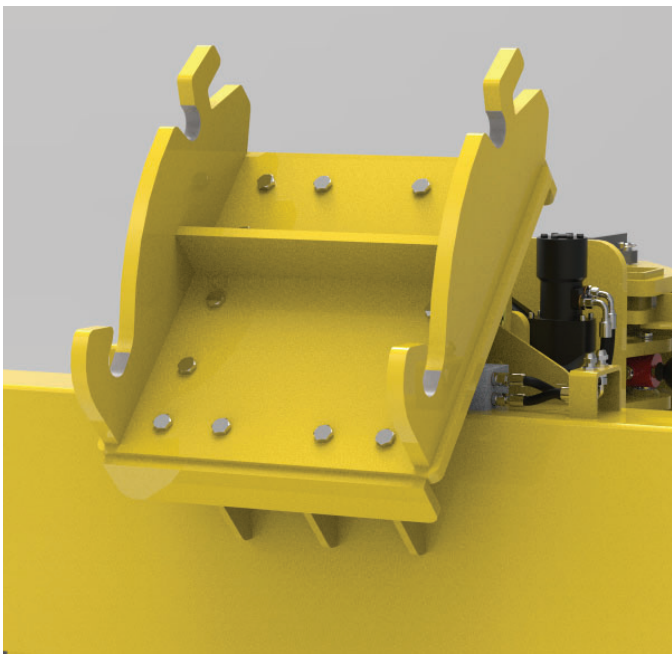
The maximum input pressure is 350Bar.



TWIN CYLINDERS WITH CHECK VALVES

The grab on the SC19-01 Sleeper Changer is built to the highest standards applicable to lifting equipment.

This includes fitting dual cylinders - each strong enough to hold the load on its own, fitting cylinders designed to withstand over twice the system operating pressure, fitting pilot operated check valves to prevent the release of the load in the event of a hose failure and minimising the risk of hose failure by using crimped fittings on twin-wired hose.



INTERCHANGEABLE ADAPTER HEAD

SC19-01 Sleeper Changers can be supplied or retrofitted with adapter heads to suit any machine type.

If you change your excavator there is no need to change the attachment - simply unbolt the adapter and bolt on a new one.

Thomson Engineering Design provide adapter systems for all machine types.

INTERNALLY BRACED STRUCTURE

The fully welded blade structure incorporates internal bracing to make it massively strong. Strong enough, in fact, to withstand a full 100kN break-out load at the cutting edge.

The main parts of the structure are of mild steel making it easy to repair any accidental damage. The cutting edges are of Hardox450 material which is both tough and hard wearing.



STEEL ROLLERS FOR RAIL HEAD

Rollers mounted at the top of the blade slots allow the blade to be moved along the rail without risk to the rail head surface. The rollers run on large sintered bronze bushes which are oil impregnated and require minimal maintenance.

Hardened rollers can be supplied if required. As standard the rollers are not hardened to further minimise risk to the rail head surface - however they are made from a high grade steel for good wear resistance.

When they finally do need replacing this operation can be completed in a few minutes.

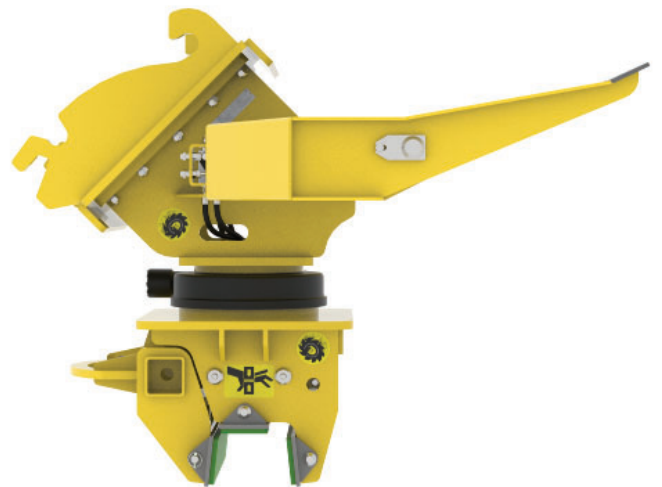


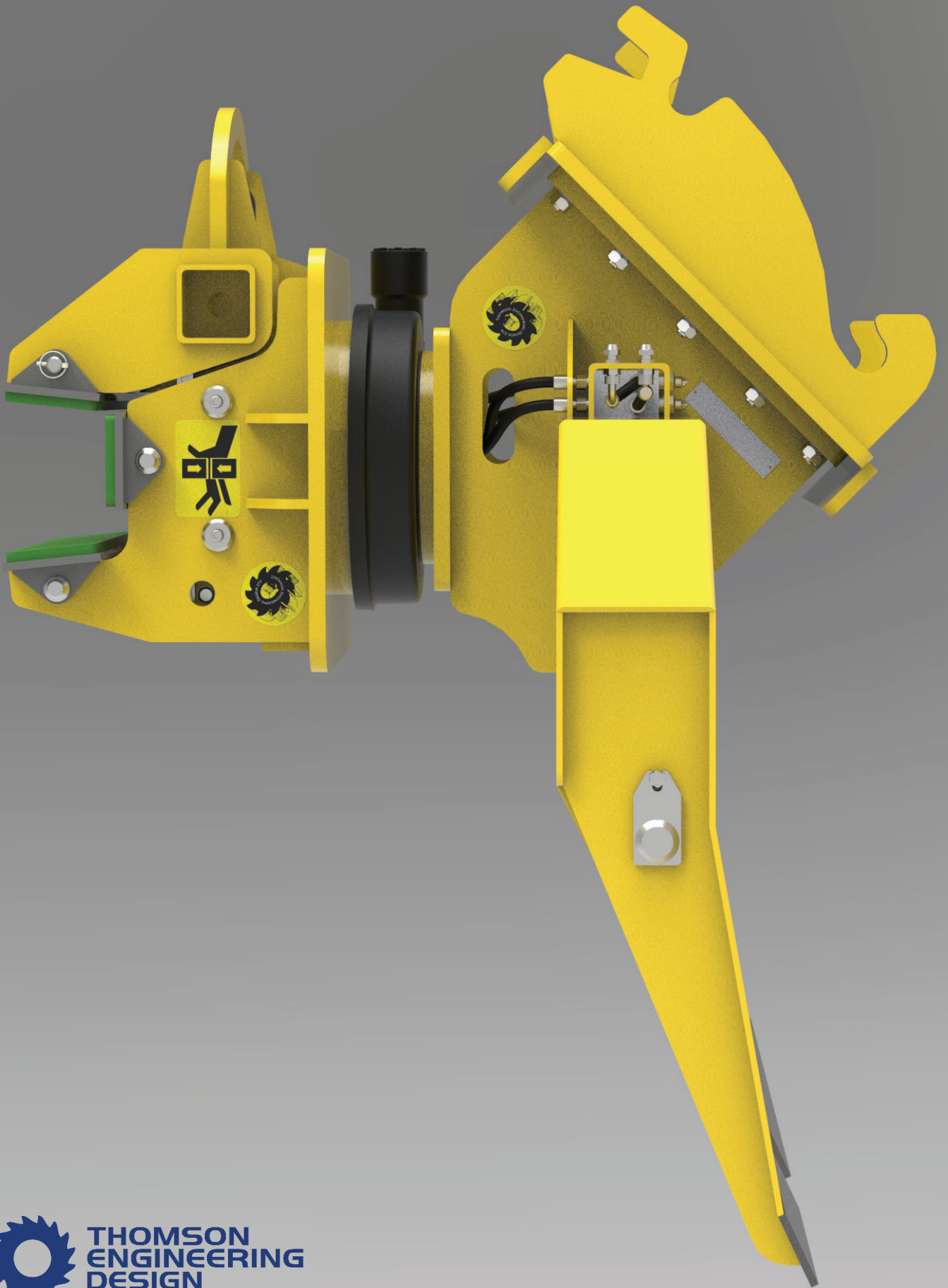
IMPROVED VISIBILITY OF GRAB

The blade is shaped to improve the visibility of the grab when removing or replacing the sleeper, making the operator's task that much easier.

When detached from the excavator the SC19-01 Sleeper Changer rests safely on the blade edge and the grab jaw.

A transport stillage with built-in fork pockets can be provided.



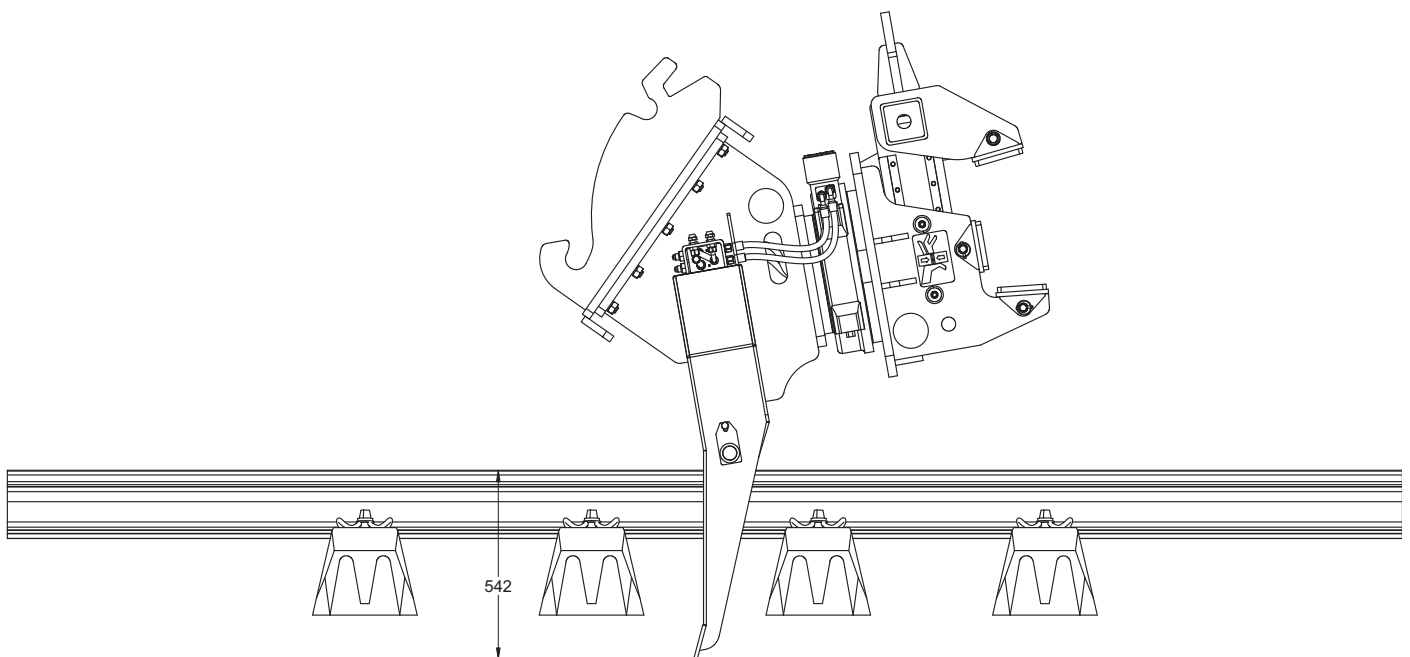


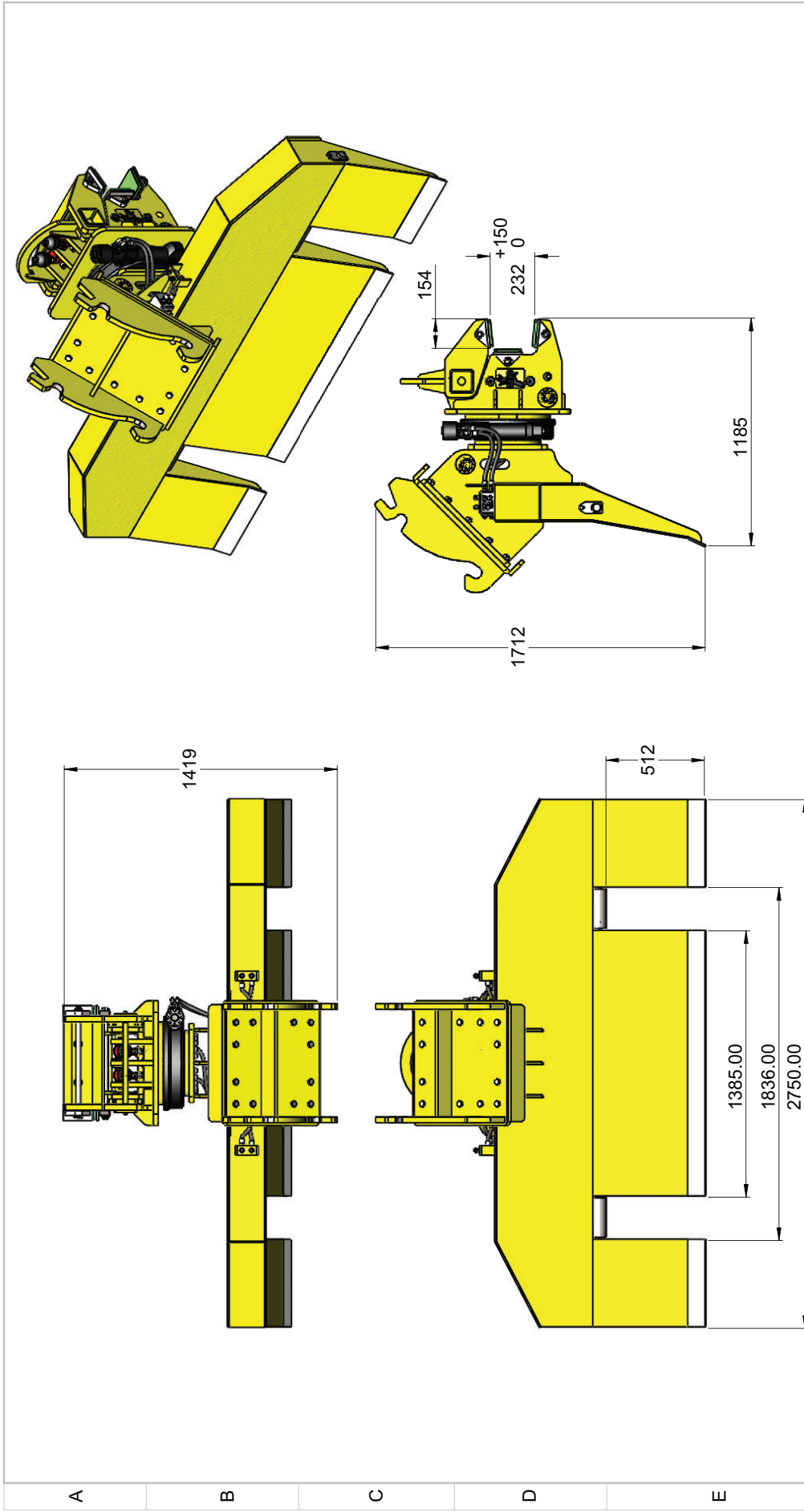
**THOMSON
ENGINEERING
DESIGN**

A  SYSTEMS COMPANY

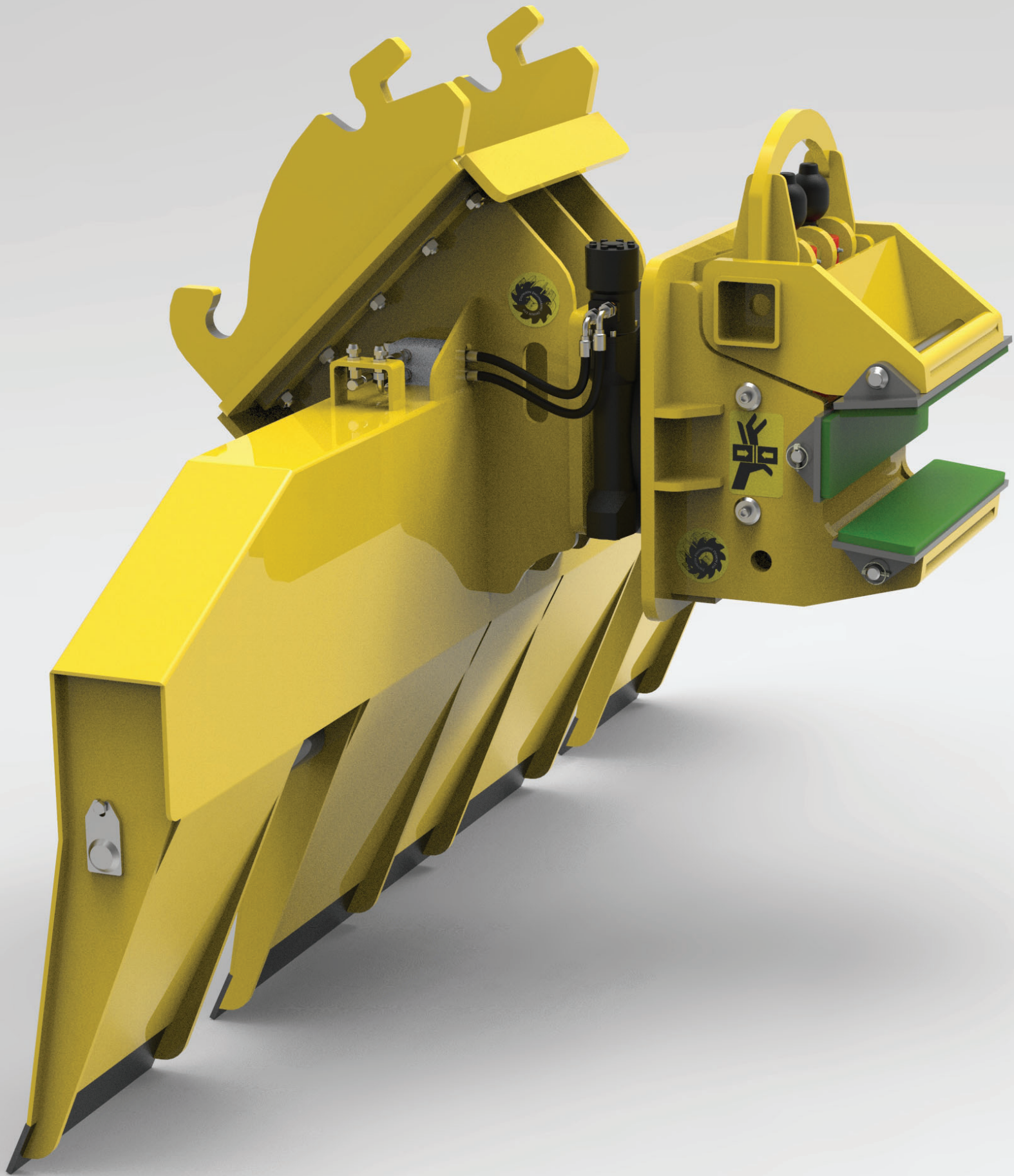
Specifications

Weight	1,225	kg
Weight (with typical adapter head)	1,375	kg
Rotator Type	Worm Drive, Continuous Operation	
Maximum Rotator Output Torque	5,000	Nm
Maximum Rotator Axial Load	920	kN
Maximum Rotator Radial Load	300	kN
Maximum Rotator Tilting Moment	65	kNm
No. of Grab Cylinders	2	
Grab Cylinder Bore / Stroke	60 / 150	mm
Grip Force on Sleeper Face	56.5	kN
Grab Pad Dimensions	590 x 140	mm
Surface Pressure on Sleeper	0.69	N/mm ²
Maximum Grab Opening	382	mm
Blade Construction	Fully welded, all steel, internal braced	
Maximum Load on Cutting Edge	100	kN
Maximum Dig Depth	542	mm below rail head
Rollers	S355	Steel
System Pressure (Rotate Circuit)	70	Bar
System Pressure (Grab Circuit)	100	Bar
Maximum Input Pressure from Excavator Systems	350	Bar





A	B	C	D	E	F	G
<p>PROJECT</p> <p>UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: FINISH: MILL TOLERANCES: LINEAR: ±0.5mm ANGULAR: ± 0.5deg</p>					<p>DO NOT SCALE DRAWING</p> <p>The information contained in this drawing is the sole property of THOMSON ENGINEERING DESIGN Ltd. Reproduction in part or as a whole is prohibited.</p>	<p>REVISION</p> <p>01</p>
<p>DEBUR AND BREAK SHARP EDGES</p>					<p>TITLE:</p> <p>UAB TECHNINIS MODULIS ASSEMBLY</p>	
<p>FINISH: MILL</p> <p>COLOUR:</p> <p>SOURCE:</p>					<p>DWG NO. SC19-01-05</p> <p>A3</p>	
<p>NAME: D.Thomson</p> <p>ORGANISATION: Thomson ED Ltd</p> <p>DATE: 26/02/2019</p>					<p>SCALE: 1:20</p> <p>SHEET OF 1 9</p>	
<p>DRWN: D.Thomson</p> <p>CHKD:</p> <p>APPVD:</p> <p>MFG:</p> <p>G.A.</p>					<p>WEIGHT: 172.20</p> <p>7</p>	
<p>Stock Size</p> <p>Stock Length</p> <p>Vendor</p> <p>Vendor No.</p> <p>Where Used</p> <p>Configuration</p> <p>QTY REQD</p>					<p>6</p> <p>Third angle Projection</p>	
<p>Client</p>					<p>5</p>	
<p>SC19-01-05</p>					<p>8</p>	



Contact Details

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*P*LEASE 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.

