

SM13-02 SLEEPER MANIPULATOR

Specifications



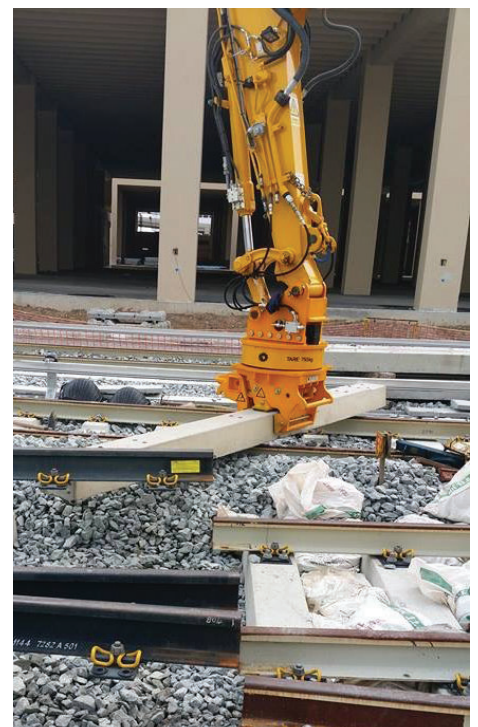
Specifications and Options for the SM13-02 Sleeper Manipulator

Issue I

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Introduction



The SM13-02 Sleeper Manipulator is one of a range of sleeper handling attachments for excavators and cranes from Thomson Engineering Design.

Our range of products includes handlers and spacers for all parts of the sleeper life cycle from manufacture to disposal.

This document presents the specifications and key features of one product within this range, the SM13-02 Sleeper Manipulator. The SM13-02 Sleeper Manipulator is an excavator attachment designed for handling sleepers and bearers of all types in general handling, sleeper changing and S+C layout operations.

Because the device grabs the sides rather than the ends of the sleeper it is also ideal for handling shortened sleepers and switch and crossing bearers.

The device has a powerful grip and interchangeable pads for concrete, timber and steel sleepers. Adapter heads may be specified for all excavator types (see our adapter head guide available on request) and may also be specified with a tilting head.

Specifications

Tare Weight - std head (typ.)	735	kg
Tare Weight - tilt head (typ.)	960	kg
Tilt Head Max. Angle	20	deg.
Max. WLL	1,000	kg
Max. Rotator Torque	3,600	Nm
Max. Grip Force	4.0	kN
Jaw Travel	150	mm
Pad Pressure on Concrete Surface (with concrete sleeper pads fitted)	0.554	MPa
Max. Hydraulic Pressure (rotator circuit)	160	Bar
Max. Hydraulic Pressure (grab circuit)	300	Bar
Min. Hydraulic Pressure (rotator and grab circuits)	90	Bar
Max. Flow (rotator circuit)	25	l/min
Max. Flow (grab circuit)	30	l/min.
Overall Dimensions (with typical head) L x W x H	916 x 700 x 1163	mm
Sleeper Width	235 to 380	mm
Concrete Sleeper Pad Surface	Polyurethane	

Key Features

The SM13-02 Sleeper Manipulator is a robust, heavy-duty manipulator which has proven itself in service since 2013.

In the following pages the key features of the Sleeper Manipulator are illustrated and described.

Heavy Duty All-Steel Construction

All parts of the SM13-02 have been designed and built for heavy-duty continuous operation. The frame and jaws are fully welded steel sections computer analysed to ensure a long life in arduous conditions.

The adapter head is removable which allows us to offer adapters to suit all excavator types and to fit the tilting head device if required.

The device is designed to be as narrow as possible allowing room to re-fit clips whilst the sleeper is being held tight against the foot of the rails in sleeper changing operations.

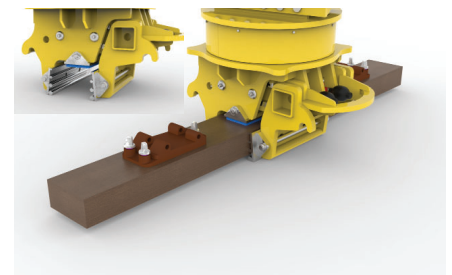
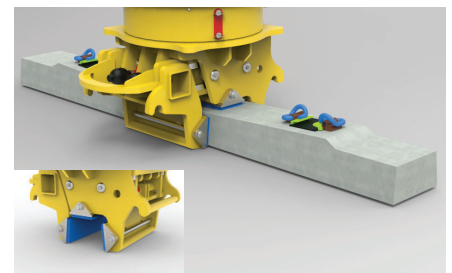


Interchangeable Jaws for Different Sleeper Types

A soft urethane coated pad sits on the top surface of the sleeper.

The sides of the sleeper are gripped by either soft urethane pads (for concrete sleepers), serrated steel pads (for timber sleepers) or hooked steel pads (for steel sleepers).

Pads can be swapped in seconds and there is room in the specially designed transport stillage to accommodate spare pads.



Purpose Designed Transport / Storage Stillage

With enough room to accommodate spare pads and hoses the dedicated transport stillage may be lifted with forks or chains and can be easily lashed down to a vehicle or wagon deck for transporting the SM13-02 to and from the work site.

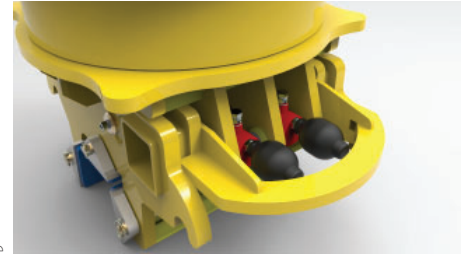


High Torque Rotation

The unique chain drive rotator allows full 360 degree rotation with extremely high torque to help remove and replace sleepers.

Linear Jaw Movement

The moving jaw of the manipulator runs in ball bearing slides for a linear action which applies the same high grip force throughout the full movement of the jaw.

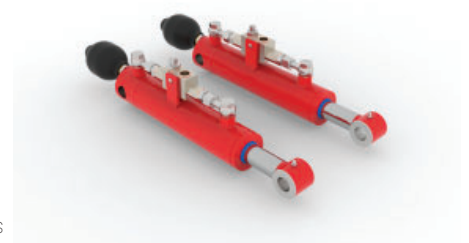


Twin Cylinder Operation

Two cylinders are used to grip the sleeper each providing enough force on its own to safely lift all normal concrete, steel and timber sleepers.

Each of the cylinders is fitted with a pilot operated check valve and a hydraulic accumulator to guard against hose failure in the manipulator or valve leakage in the host machine.

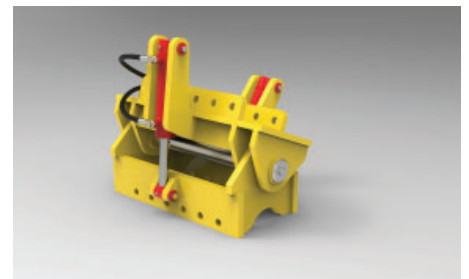
This duplication of the cylinder assemblies makes for the safest grab system available and allows pads to be designed without a steel lip under the sleeper edge thus eliminating the risk of damaging the bottom edges of the sleepers.



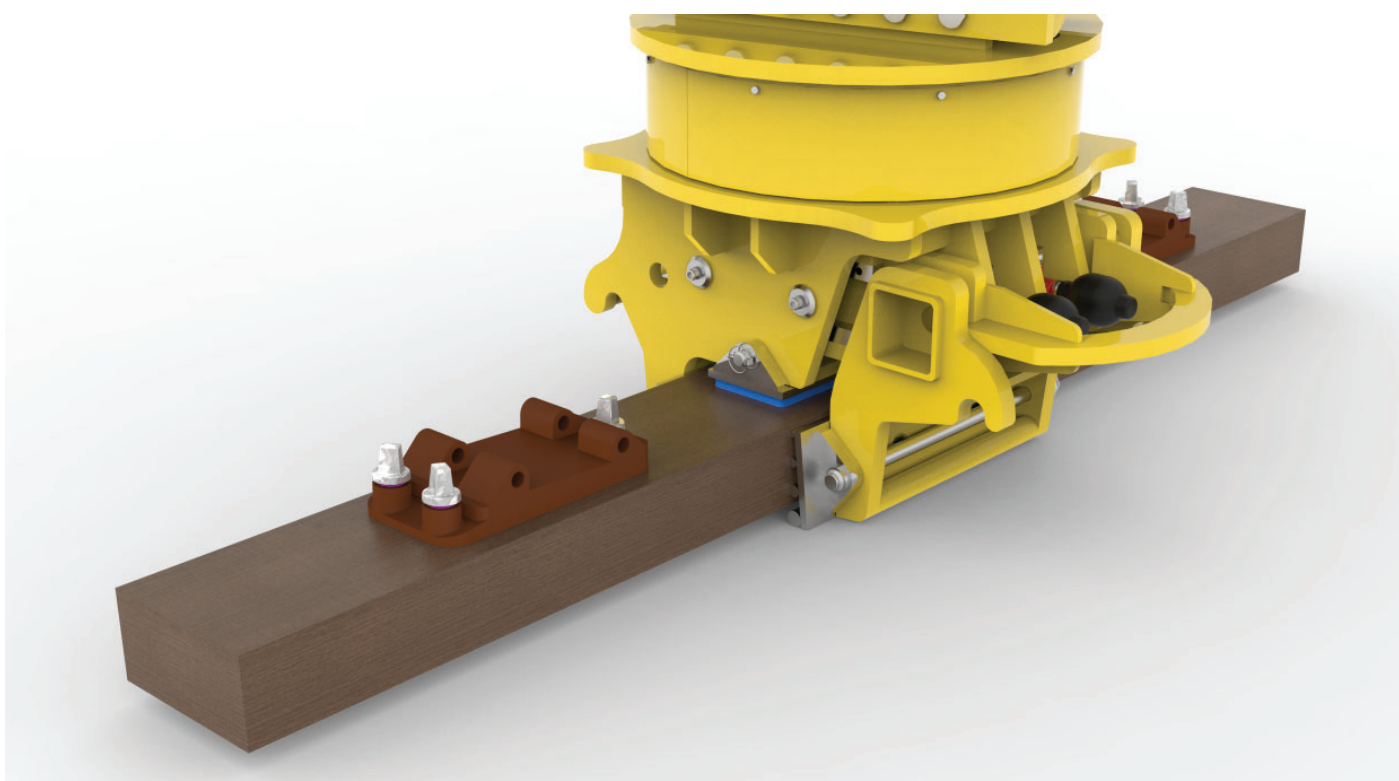
Tilt Head Option

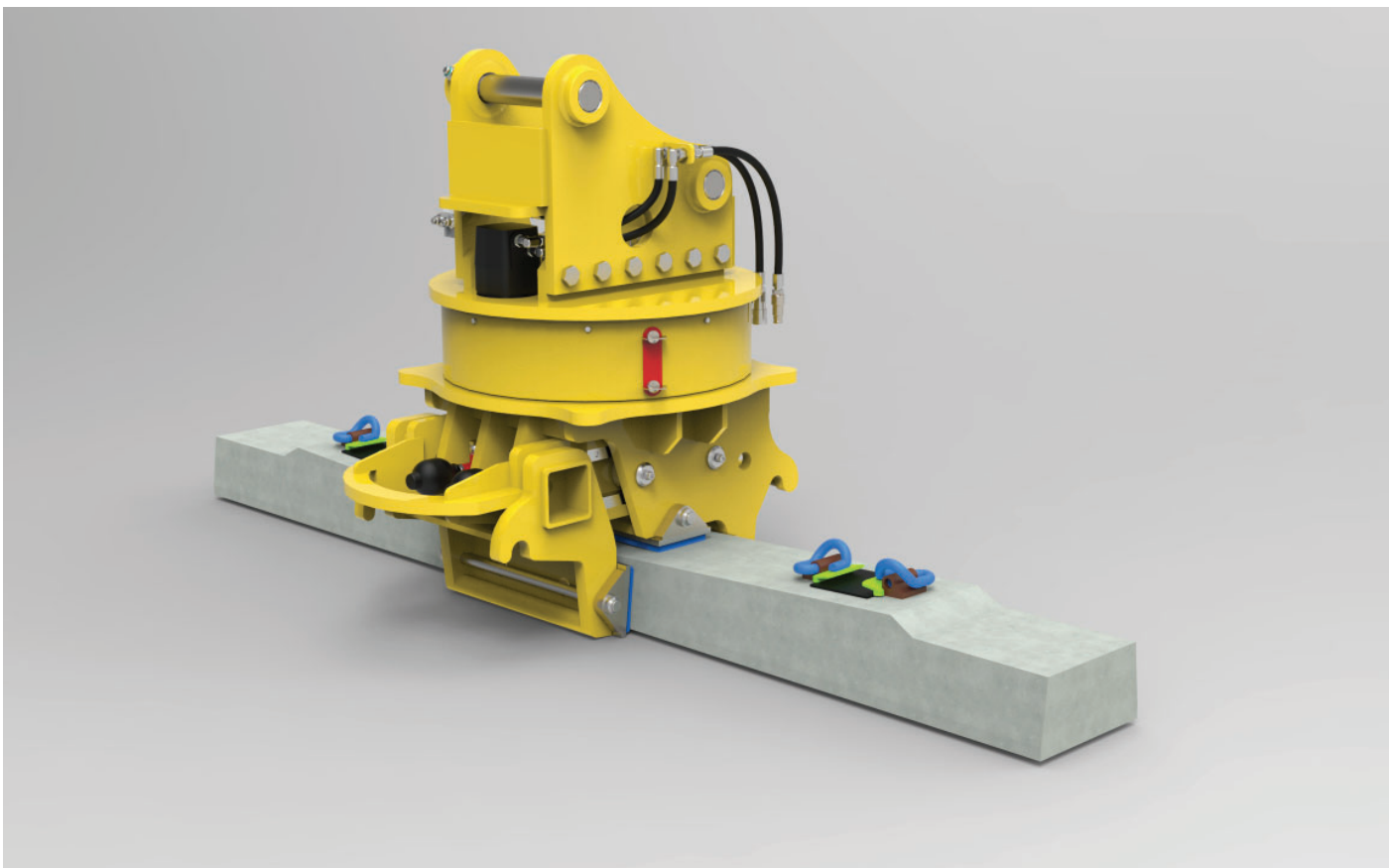
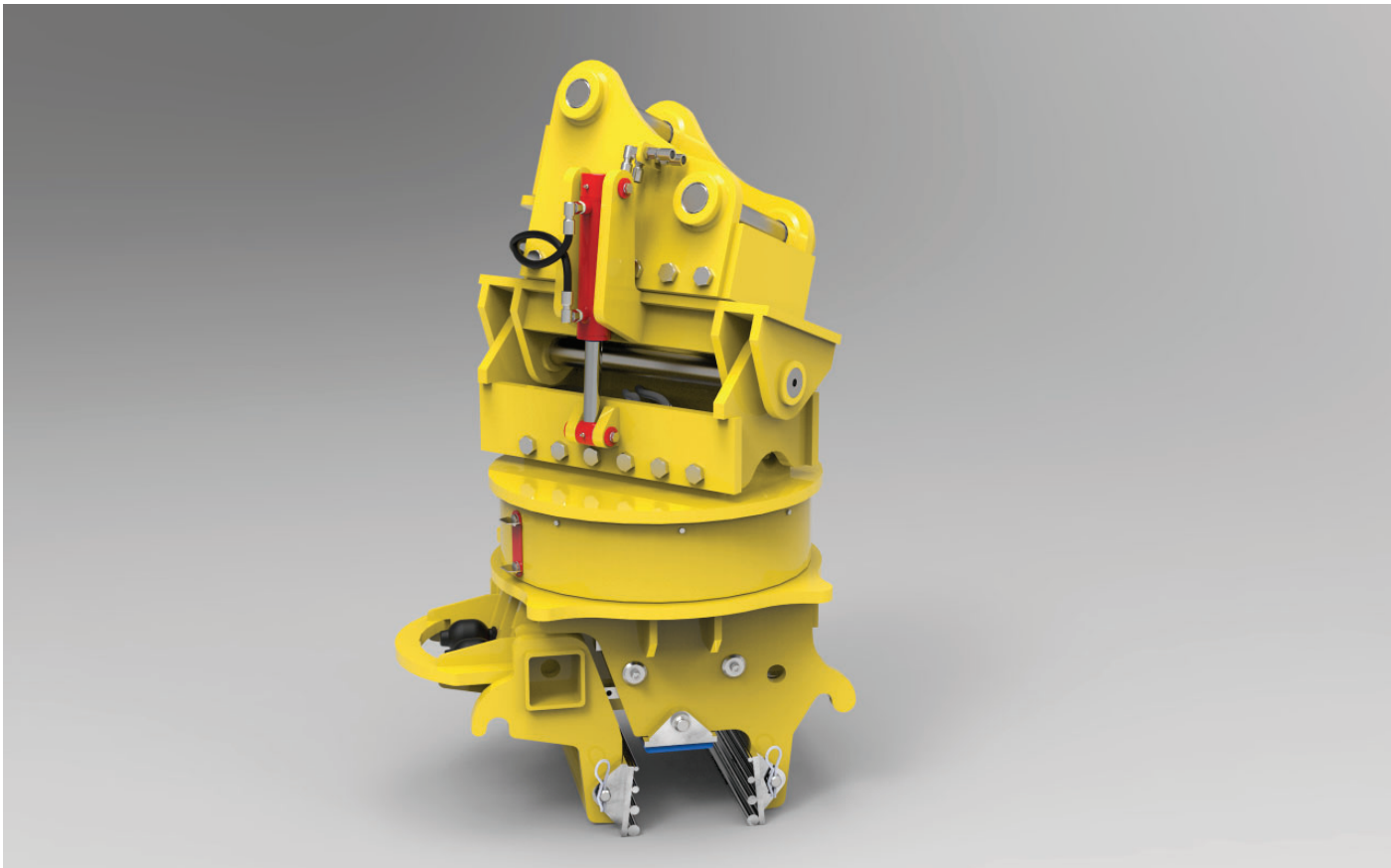
As well as the ability to exchange the adapter head to suit different excavator mountings, a tilt section can also be fitted between the adapter head and the body of the SM13-02 Sleeper Manipulator where work is to be carried out with the host machine mounted on an adjacent canted track.

Twenty degrees of tilt capacity to either side is more than enough to cope with rail cants up to 200mm.



Images and Drawing





Contact Details

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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.

