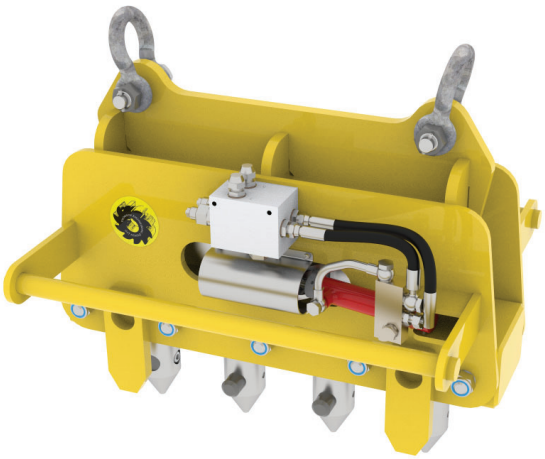
MRHI4-03-03
Hydraulic Rail Lifter for 3-Rail Bundles



Specifications

Issue I

March 2019

Document Number: MRHI4-03-03 Issue: 01 Date: MARCH 2019

THOMSON ENGINEERING DESIGN
A QM SYSTEMS COMPANY

Introduction

The MRH14-03-03 Hydraulic Rail Lifter is one of a family of Multi-Rail Handlers from Thomson Engineering Design.

This family of products includes rail lifters suitable for handling flat bottom rails of all types from 2 to 12 rails per bundle. Rail handlers may be manually operated or powered electrically, hydraulically or pneumatically to suit individual requirements.

All models may also be specified with visual status indicators and built in feedback switches for integration into fully automated rail handling installations.

This document covers the specification for the basic 3-Rail, hydraulically powered version suitable for handling heavy section running rails with a rail foot width of 140mm to 152mm.

All lifting equipment manufactured by Thomson Engineering Design Ltd is designed and built under our ISO9001:2015 approved quality management system and all devices are proof-load tested prior to despatch.

Thomson Multi-Rail Handlers are relied on throughout the world as a robust and reliable solution to rail bundle handling.

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Contents and Issue Record

Issue Record

First Issue	March 2019

The MRH14-03-03

The MRH14-03-03 Rail Lifter is a grab designed for gripping bundles of 3 flat-bottom rails. Its mechanism is powered hydraulically and is a twist-lock system supporting the rails with hardened steel bars under the rail heads.

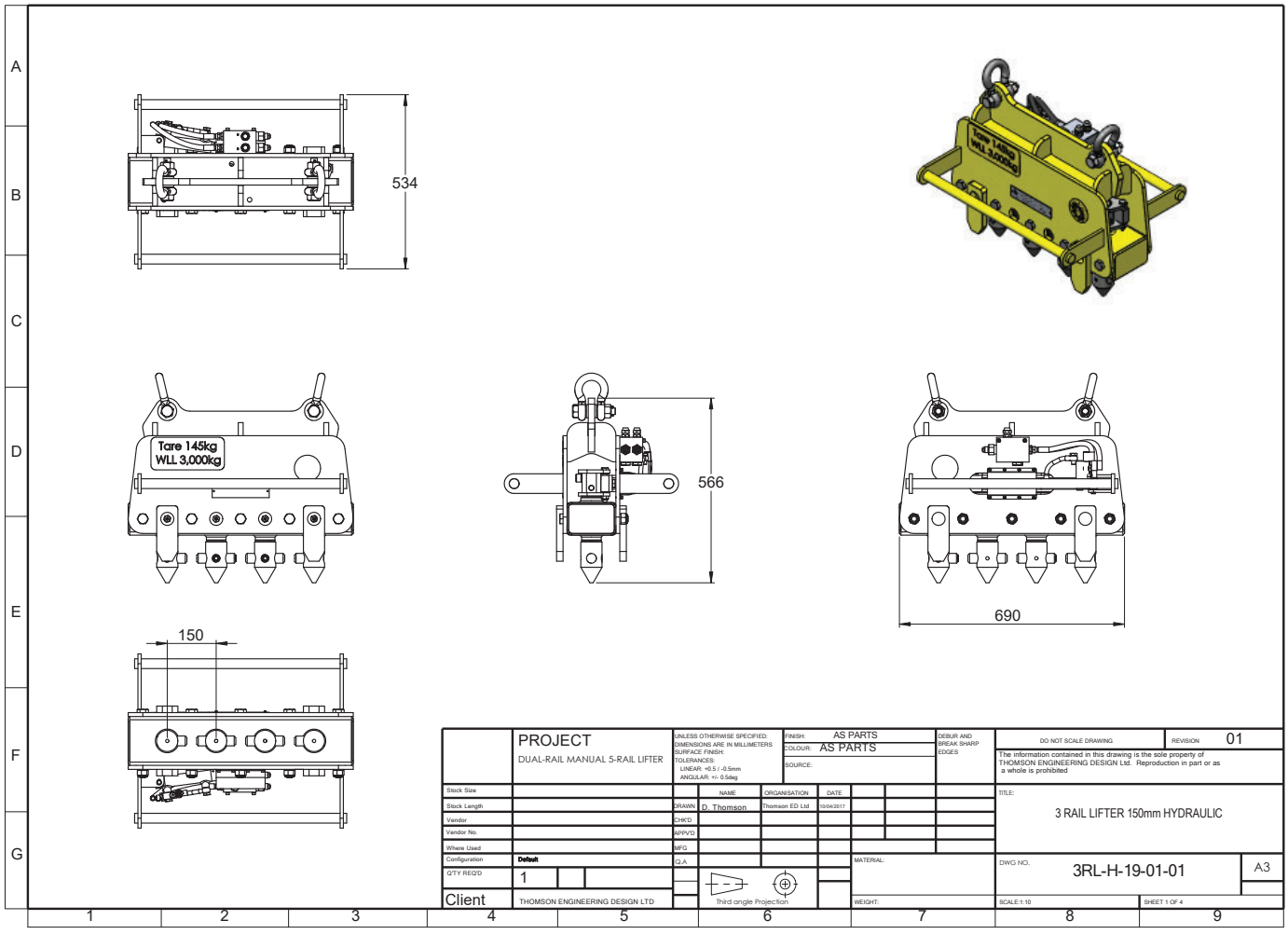
The device is protected from hose or hydraulic system failure by a cylinder mounted check valve which automatically locks the mechanism if hydraulic pressure is lost. This feature makes the device fail-safe.

All the load-bearing parts are steel and are protected by either a powder coated or electro-zinc plated finish. The pegs which engage with the rails are case hardened to give a long service life.

The rotating shafts are mounted in oil-impregnated sintered bronze bushes and can be greased for daily maintenance.

Every unit is individually tested on our calibrated test rig prior to despatch and is delivered with a test certificate, a CE certificate of conformity and an operating and maintenance instruction manual.

Each rail lifter can typically support the weight of 20m of rail however, when designing a lifting arrangement the sag in the rail and the stresses this induces in the rail section must be considered. Thomson Engineering Design will be pleased to advise on individual systems but typically we recommend using one Rail Lifter no more than 6m from the end of the rail length and further Rail Lifters at 6m spacings on light rail sections to 10m spacings on heavy section rails.



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Operation and Key Features

With the shafts rotated so that the pegs are parallel with the rail lengths the device is lowered onto the rail bundle.

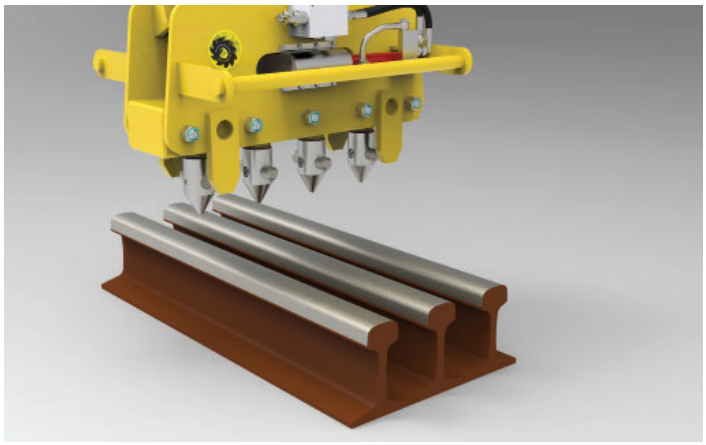
Guide bars help to hold the device square to the rails as the shafts are lowered into the gaps between the rail heads.

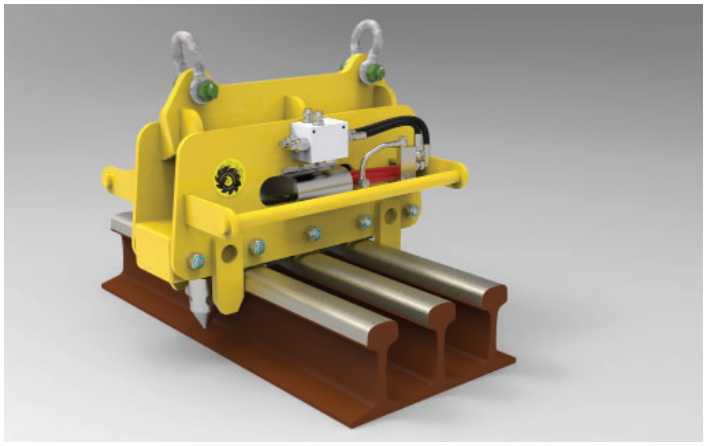
Once the body of the Rail Lifter has come to rest on the rail heads the mechanism is operated to rotate the shafts so that the hardened steel pegs sit under the head of the rails and the whole assembly is ready to lift the rail bundle.

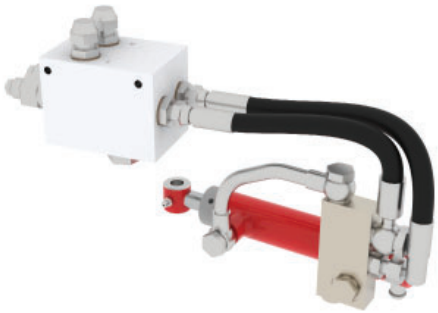
The mechanism is operated by a hydraulic cylinder which is protected against pressure loss, such as might occur with a burst hose, by a pilot operated check valve mounted directly on the cylinder port.

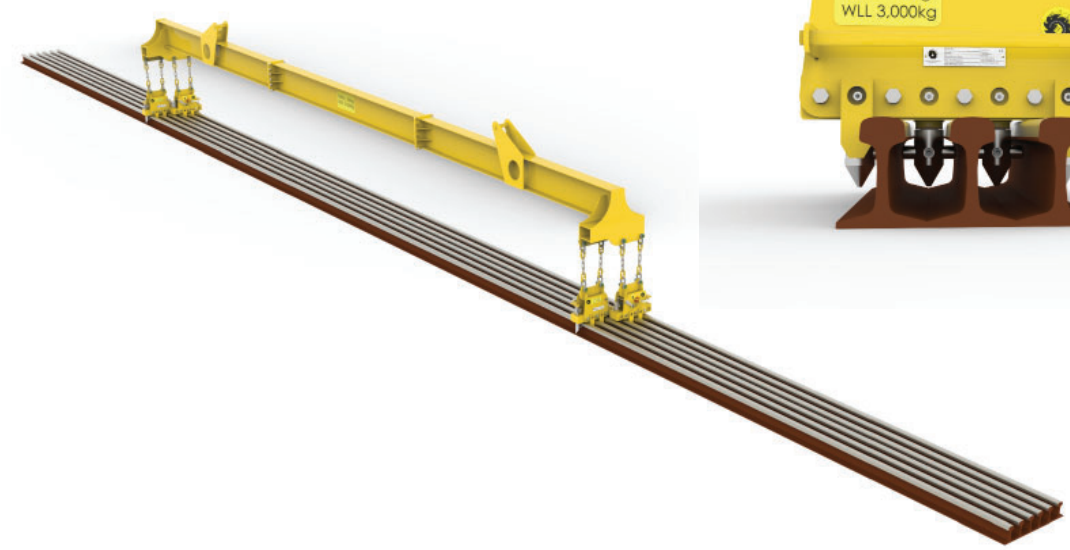
The whole system is further protected by a pressure reducing valve which limits the pressure passed to the check valve and cylinder to increase seal life and to remove the risks associated with hydraulic shock loads.

Thomson Engineering Design can also provide a full range of beams and load spreader systems for handling any rail length. These include beam systems to handle multiple bundles.









Specifications

Tare Weight	145	kg
Working Load Limit	3,000	kg
Proof Load (factory test)	6,000	kg
Maximum Hydraulic Pressure	350	Bar
Minimum Hydraulic Pressure	90	Bar
Recommended Hydraulic Pressure	100	Bar
Cylinder Bore	25	mm
Cylinder Stroke	150	mm
Cylinder Rod Diameter	16	mm
Active Stroke (mechanism open to locked)	82	mm
Fluid Volume (open to locked)	40.25	cc
Fluid Volume (locked to open)	23.75	cc

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

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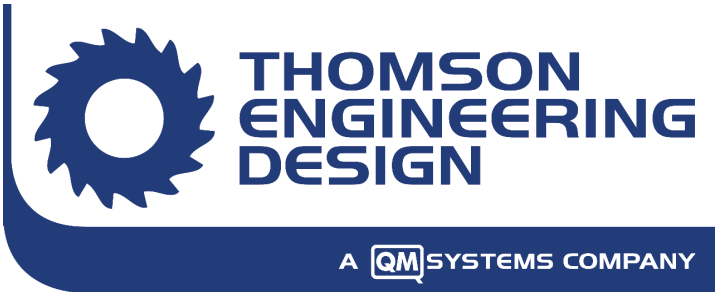

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