

THRAIL Re-levelling & Re-alignment System F100/55  
THRAIL fully adjustable re-levelling and re-alignment crane rail system is designed for the situations where post-installation vertical and horizontal movements of foundations

caused by settling. It is suitable for 150mm rail width and has a wide application on extensive rail models.

Performance:

Payload vertically: 300KN

Maximum lateral payload: 60KN

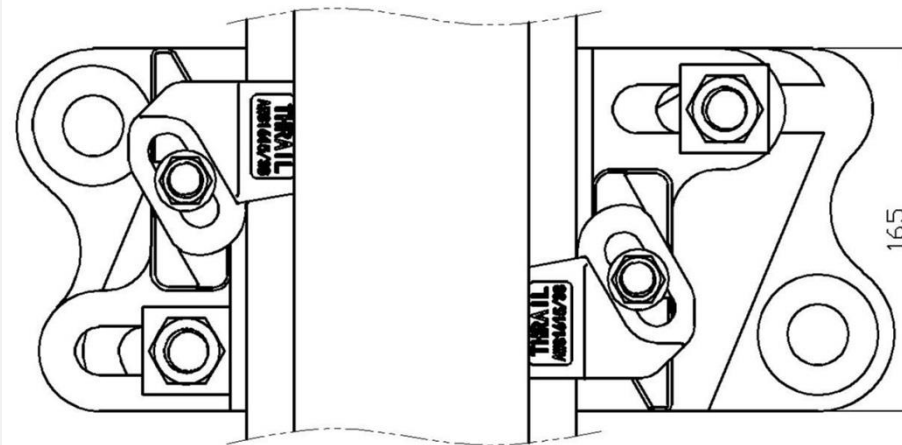
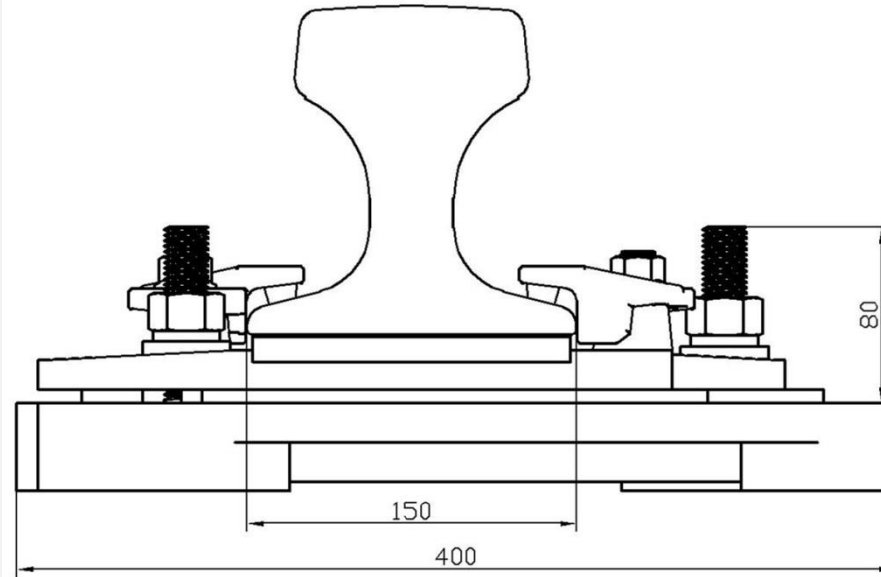
100mm vertical adjustment

55mm horizontal adjustment (40mm adjustment via slotted holes on top soleplate and 15mm adjustment on rail clips)

Features:

1. 100mm vertical adjustment via adding/removing shim plates
2. 40mm horizontal adjustment via slotted holes
3. Replaceable hex head bolts to allow for small or large vertical settlement

## THRAIL-F100 Re-levelling & Re-alignment System

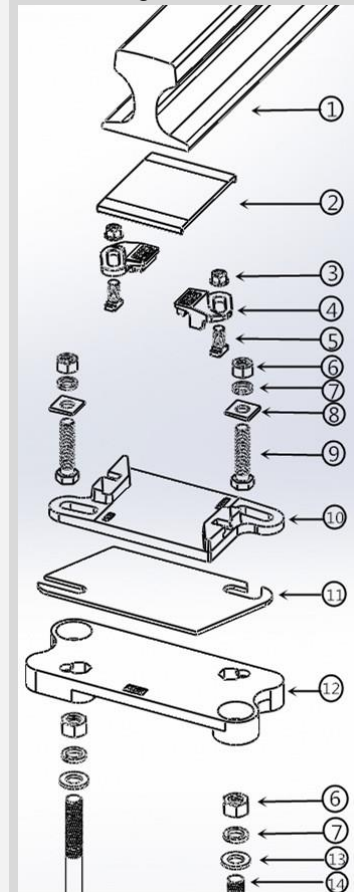


Installation Diagram

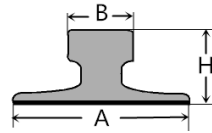
THRAIL-F100 Re-levelling & Re-alignment System

## COMPONENTS

1. Rail
2. Mk2 pad
3. Flange nut
4. Clip cap
5. Captive bolt
6. Nut
7. Spring washer
8. Tapered washer
9. Soleplate bolt
10. Top soleplate
11. Shim plates
12. Bottom soleplate
13. Washers
14. Holding don bolt

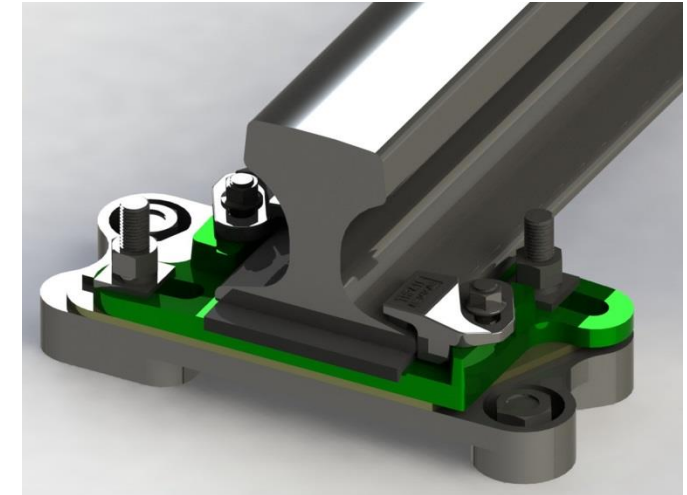


The product applies to the rails whose bottom width is around 150mm. Common rail models are listed on the following table. To apply the product to more rail models, please contact THRAIL for solutions.



RAIL TYPE	A mm	B mm	H mm	RAIL WITH PAD	RAIL WITHOUT PAD
QU100	150	100	150	AWS1615/38(C1)	AWS1615/38(C2)
MRS85	152.4	102.9	152.4	AWS1615/38(C1)	AWS1615/38(C2)
AS86	150	101.6	152.46	AWS1615/38(C1)	AWS1615/38(C2)
MRS87A	152.4	101.6	152.4	AWS1615/38(C1)	AWS1615/38(C2)
MRS87B	152.4	102.2	152.4	AWS1615/38(C1)	AWS1615/38(C2)
ISCR100	150	100	150	AWS1615/38(C1)	AWS1615/38(C2)
UIC60	150	72	172	AWS1615/38(C1)	AWS1615/38(C2)
SP100	150	108	150	AWS1615/38(C1)	AWS1615/38(C2)
171CR	152.4	102.9	152.4	AWS1615/38(C1)	AWS1615/38(C2)
175CR	152.4	102.2	152.4	AWS1615/38(C1)	AWS1615/38(C2)
131AREA	152.4	74.2	180	AWS1615/38(C1)	AWS1615/38(C2)
132AREA	152.4	74.6	181	AWS1615/38(C1)	AWS1615/38(C2)
66kg	152.4	75.1	181	AWS1615/38(C1)	AWS1615/38(C2)
68kg	152.4	73.4	185.7	AWS1615/38(C1)	AWS1615/38(C2)
KP100	150	100	150	AWS1615/38(C1)	AWS1615/38(C2)

At the initial installation these are provided in a suitable length to allow an initial amount of vertical adjustment whilst providing adequate clearance to crane guide wheels. Integral to the top system are the THRAIL self-locking rail clips which fix the rail on ground tightly. Between the rail and top soleplate is THRAIL-MK2 pad that prevents the rail from excessive internal stress under high wheel pressure and ensure to distribute the stress from crane wheels uniformly to eliminate the load concentrations and fatigue. The bottom soleplate is fixed on concrete foundation by two holding down bolts. Horizontal adjustment can be achieved by two nuts under soleplate. Once the precise final level of the rail is achieved, workers can start to infill the non-shrink grout. Regular inspection of crane rail operation is required after installation to decide whether to adjust the railway vertically or horizontally. To adjust the system vertically after foundation settlement, the bolt nuts on both top and bottom soleplates are loosen and the rail is then adjusted to new altitude. Shim plates are inserted between the top soleplate and bottom soleplate as required to lift up the rail. If the original soleplate bolts are not long enough to meet the new altitude, they can be replaced with longer hex head bolts. To adjust the system horizontally, this can be achieved with 15mm adjustment on rail clips, and another 40mm adjustment via the slotted holes on top soleplate. Once all adjustments have been done, all nuts are re-tightened to the specified torque.



Rails built by the river, sea or mounted on reclaiming land must overcome shifting rail foundations without rail removal. Adopting general rail fixing clips is not a good choice to solve this problem. It will cost huge time, labor, money to rebuild railway after foundation settlement. Hence, it is vital to design a new rail fastening system that can deal with the foundation settlement effectively. Thanks to the efforts and persistence from research staves, we produced a new kind of rail fastening system which can achieve 100mm vertical adjustment via adding/removing shim plates. It is an economical solution to solve foundation settlement (within 100mm) to occur post installation.

## Installation Instructions:

Separation distance between two bolts: 500-700mm  
Torque to tighten the bolts: Torque to tighten the bolts on top soleplates 350Nm (can use impact wrench)  
Torque to tighten the bolts on bottom soleplates 475Nm (can use impact wrench)  
One rail fastening system includes a rail pad, a top soleplate, a shim plate, a bottom soleplate, two rail clips, two flange hex nuts, two tapered washers and two anchor bolts.