TPA
Rapid Rail Access

User Guide

# UTAS Universal Track Access System

## (Rail Operations and Installation)

Track Access System –The ultimate track armour for use with road rail vehicles (RRVs)

**Important Notes:**

All installation work must be thoroughly planned before work commences on site to identify hazards and assess risk.

These instructions form guidance for the operation and installation of the UTAS Universal Track Access System. Non-standard applications should be approved by a suitably qualified engineer.

Ensure all personnel engaged in installation operations are properly briefed and adequately supervised by a competent person.

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IF IN ANY DOUBT SEEK FURTHER ADVICE:
24 HOUR HELPLINE: 0370 240 2381

| Rev | Date | Comments | Initial |
|---|---|---|---|
| 1.3 | 29/09/20 | Update | DSW |

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UKAS MANAGEMENT SYSTEMS
0026
Certification Number 14419
ISO 9001 • ISO14001 • ISO45001

**WARNING: Failure to comply with the following requirements and instructions may result in damage to the UTAS, machine and/or the rail infrastructure.**

- The Universal Track Access System (UTAS) is not designed to be manually lifted and carried.
- All work on or near the railway infrastructure must be carried out strictly in accordance with railway regulations.
- Work must be carried out in strict accordance to rulebook GE/RT 8000 and all safety precautions must be followed at all times.
- When working on electrically operated routes, be sure to observe official regulations. Always observe minimum clearance from overhead wires.
- Not to be used in 3rd and 4th rail areas.
- Ensure ground works are completed in accordance to the instructions within this document before attempting to install the UTAS.
- Never install UTAS without a possession.
- Not to be installed when trains are running.
- Not to be passed over by trains. When the UTAS is installed the line is blocked to engineering traffic.
- Not suitable for use with vehicles with rail axle loads in excess of 20 tonnes.
- All staff must be fully trained and certified as competent to use this piece of equipment on railway infrastructure.
- When on tracking on the UTAS, care must be taken when lowering the rail bogies onto the UTAS rail head to ensure all of the rail wheel flanges are in line with the channels in the UTAS deck. If the rail wheels are deployed whilst miss aligned damage to the UTAS may result.
- Do not attempt to use the UTAS in areas with close proximity hazards such as in station platforms under/on bridges, in tunnels or in areas with low overhead structures or line side structures.
- Do not attempt to use the UTAS in areas with any cable connections to the rail.
- Do not attempt to use the UTAS in areas with ATP loop cables either in the rail web or in the ‘four foot’.

**Continued...**

**WARNING: Failure to comply with the following requirements and instructions may result in damage to the UTAS, machine and/or the rail infrastructure.**

- Do not attempt to use the UTAS in areas with any cables cleated to the top surfaces of sleepers.
- Do not attempt to use the UTAS in areas with any signalling equipment fitted in the 'four foot'.
- Site logistics must be considered when fitting the UTAS on site. The UTAS may need to be removed following on-tracking, depending on site activities.
- Use of UTAS in the vicinity of automatic level crossings may affect the closure of the crossing to road traffic. If the on-tracking site is required to be within the 'strike-in zone of an automatic level crossing, UTAS shall not be used, unless appropriate manual control of the crossing is in place. Ideally in this situation, arrangements should be planned to make use of the crossing itself as the on-tracking point.
- If there is a fixed train approach warning system fitted, or the on-tracking site is within the 'strike-in' zone of such a system, UTAS shall not be used unless appropriate warning measures are in place to provide an alternative safe system of work.
- HVI track circuits can produce sufficiently high voltages in the rail to cause minor injury if touched. Whilst not dangerous in themselves, contact could result in potentially harmful accidents. If HVI track circuits are installed, UTAS should not be used unless the circuits have been disconnected, or the staff installing UTAS are wearing suitable non conductive PPE.

## Equipment

- Crane/Lorry Loader/RRV or other vehicle capable of safely lifting 1 tonne at the required radius.
- 4-leg lifting chains with 30mm internal diameter eyes with shorteners, rated at a minimum of 500kg SWL per leg @ 45 degrees.

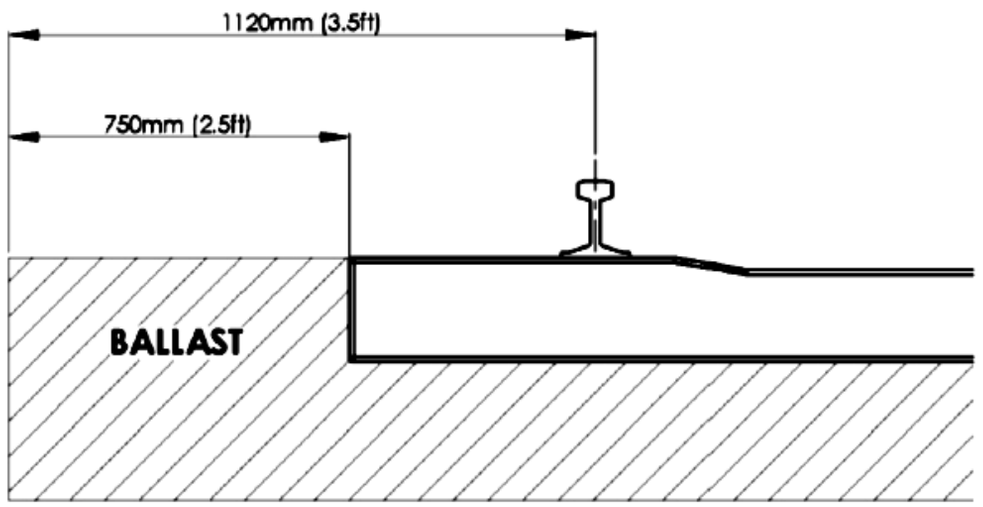
## Installing

Before attempting to set up the Universal UTAS (Universal Track Access System) the access point may need to be prepared. The position of the access point should be determined during the site walkout. Check that the ballast at the sleeper ends is level to the same height as the tops of the sleeper within +100mm –100mm at the toe of the ramp. This may involve either building up the ballast level at the sides of the track (cess) or grading away high shoulders to achieve top of sleeper level. The ballast should be prepared at this level to a minimum of approximately 1.2m (3.5ft) from centre of the nearest running rail or 0.75m (2.5ft) from sleeper ends.

## Installing Cont...

It may be beneficial to compact/consolidate the ballast in this area as to provide a solid base for the toe of the UTAS ramps.

It is important that no more than 50mm of subsidence at the toe occurs when the weight of the machine is applied to the ramp.




## De-installing

The de-installation process is the reverse of the installation process. Put the ramps sections away first followed by the centre deck section.

Always ensure there is adequate possession time planned to safely disassemble the UTAS and store all sections clear of the line (at least 3m away)

## Rated capacity of UTAS

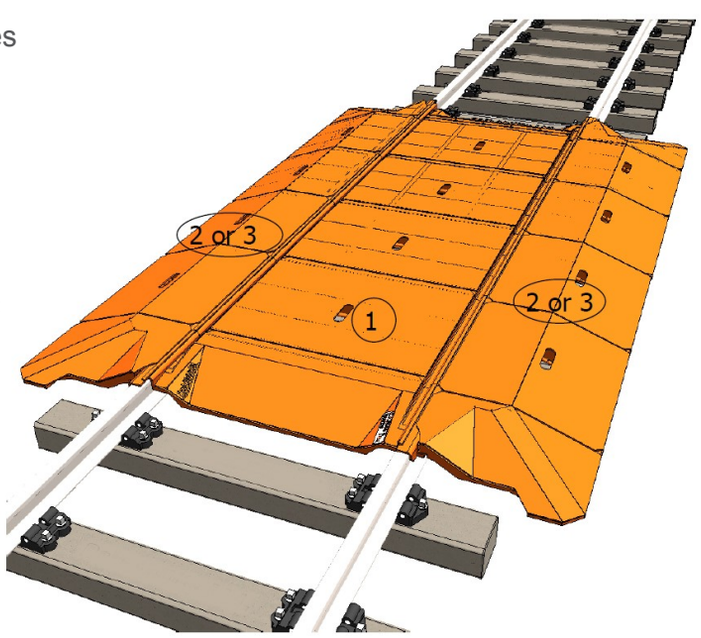
**Road vehicles:** axle weights of up to 20 tonnes per axle with a minimum chassis ground clearance of 300mm

**Tracked machines:** up to 50 tonnes

**Rail axle loads:** up to 20 tonnes

When installing the UTAS into position on the rail head, the components must be lifted into position in order as follows:

1. Centre Section
2. Ramp Section
3. Ramp Section

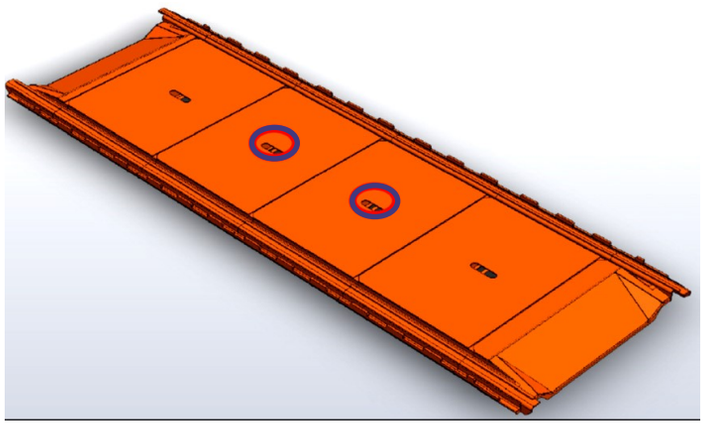


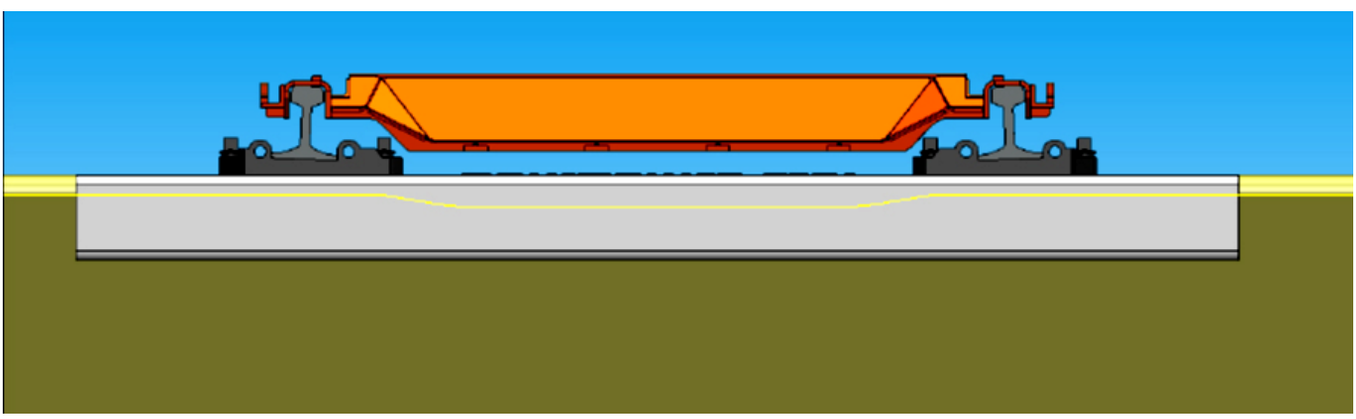

**WARNING:** Failure to comply with the following requirements and instructions may result in damage to the UTAS, machine and/or the rail infrastructure.

## Installing Centre Deck Sections

1. To ‘unload’ the UTAS components simply attach the lifting hooks to the lifting eyes in the ramps using a certified two leg lifting chain.

2. To ‘install’ the UTAS centre deck section, attach the lifting hooks to the lifting eyes in the segments using a certified two leg lifting chain as shown right.





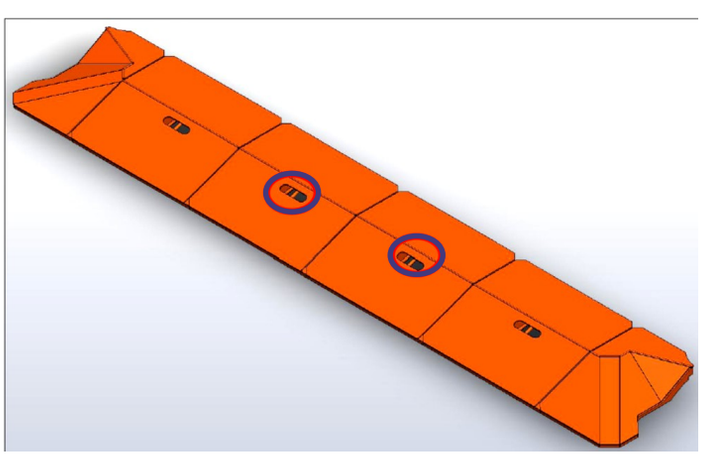
3. The section, shown above, should be lifted over the four foot and aligned parallel to the rails. This section should then be lowered into position and is supported by the rails when in place.

4. The centre deck section is then aligned and lowered into position on the rail head as shown below, making sure the channels on the under side of the deck is located onto the rail head and is in contact with the rail head along the full length of the deck.

5. Check that the top of the ramp section is running parallel with the rail. If this is not the case the ground preparation is not adequate.

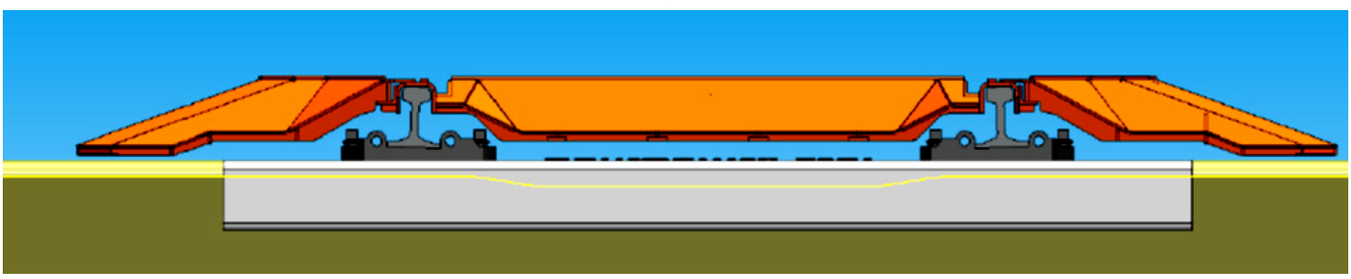
## Installing Ramp Sections

1. When the centre deck section is in position the next stage is to install the side ramp sections. This also requires two lifting points as shown right.



## Installing Ramp Sections Cont...

2. Make sure the decks of the three sections line up across the track and position the first ramp section. If the ramp section will not fit, either the ground preparation is inadequate causing the toe of the ramp to be too high or too low, or the castellated retaining lugs are not aligned correctly between the centre deck section and the ramp section.



3. Repeat this process for the second ramp section

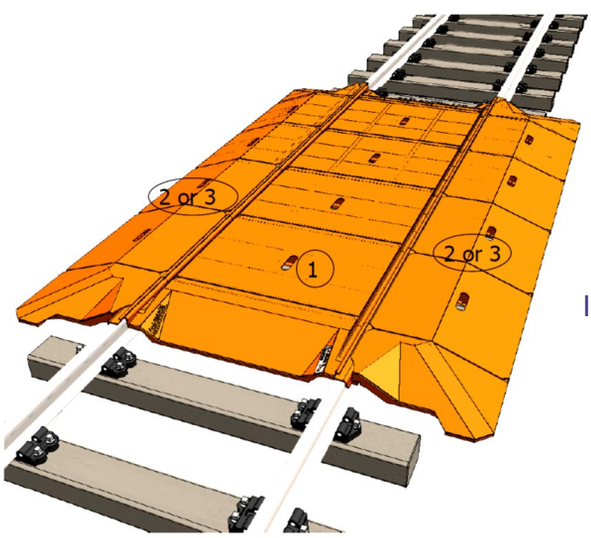



Image showing centre deck and ramps assembly

## Operating Wheeled RRVs on UTAS

### On / Off / Cross Tracking Machines

The following hazards should be addressed:

- Cant – not to exceed 150mm
- Ballast shoulder – high / low
- Deep cess / soft cess
- Drainage routes, troughing routes and other services/cables
- OHLE power cables
- Switches and Crossings
- Overhead and close proximity structures and infrastructure

## Operating Wheeled RRVs on UTAS Cont...

### Mounting UTAS (Using Wheeled RRVs)

- When mounting the UTAS with a wheeled machine it is recommended that the machine approaches the ramp at 30° and at no more than walking pace.
- Drive the machine forward to climb up the sloped ramp section
- The RRV to be manoeuvred so that the rail wheels align with the artificial track on the deck. When manoeuvring on the deck, care must be taken at all times.
- Ensure all rail wheels are in line with the artificial track built into the centre deck sections before lowering rail gear.
- Once aligned, lower the rail gear. Before continuing ensure both front and rear rail gear is fully deployed.

### Dismounting UTAS

- To dismount the UTAS ensure all rail wheels are on the artificial track built into the centre deck sections before raising the rail gear.
- As with mounting, the RRV must exit the UTAS at 30° to the ramp.

### Mounting UTAS (Using Tracked RRVs)

- When mounting the UTAS with a tracked machine it is recommended that the machine approaches the ramp at 90° and at no more than walking pace.
- Track the machine forward to climb up the sloped ramp section
- As the machine approaches its balance point and is about to tip forward, movement should be decreased further. This will produce a controlled tip, after which the vehicle can resume slow movement.
- The RRV is now manoeuvred so that the rail wheels align with the artificial track on the deck. When manoeuvring on the deck care must be taken to remain on the flat deck plates at all times.
- Ensure all rail wheels are in line with the artificial track built into the centre deck sections before lowering the rail gear.
- Once aligned, lower the rail gear. Before continuing, ensure both front and rear rail gear is fully deployed.

### Dismounting UTAS

- To dismount the UTAS ensure all rail wheels are on the artificial track built into the centre deck sections before raising the rail gear.
- As with mounting, the RRV must exit the UTAS at 90° to the ramp. When manoeuvring for this, the vehicle must remain on the flat deck area, as before.