



User Guide



Type A Trolley (Standard and LUL)

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Please note

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All information, illustrations and specifications in this User Guide are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Equipment operators and installers shall be responsible for ensuring that a safe working environment and safe systems of work are in place and in certain circumstances advice and permission from the controlling authority must be sought before any operation, installation or surveying work is carried out.

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1 INTRODUCTION

The Permaquip™ Type A Trolley is designed to be used as a manual propelled, stand-alone load-bearing rolling platform for use on-track.

Each Type A Trolley is equipped with a fail-safe braking system and is supplied with detachable Brake and Push Handles.

2 SAFE AND CORRECT USE

Please keep this User Guide for future reference.

To ensure safe and correct use of the Type A Trolley the following should be noted:



Wear feet and hand protection when using the Type A Trolley. Additional Personal Protective Equipment (PPE) should be worn according to local regulations.



The Type A Trolley, or parts of, must be replaced if damage occurs. Do not use the Type A Trolley if any components are damaged.



Store the Type A Trolley in a secure position.



LUL Type A Trolleys and other Type A Trolleys fitted with insulated wheels must not be used in locations where live AC overhead power lines are present. Do not use the Type A Trolley near live DC third-rail or fourth-rail systems.



Before using, undertake a Manual Handling Risk Assessment and follow the assessment guidelines at all times. Use the Brake and Push Handles provided. Do not exceed walking pace, noting underfoot and rail head conditions. Do not walk on sleepers or the rail head.



Stopping distances will greatly increase by icy or wet conditions; gradients; an increase in load; an increase in speed.



Do not allow any load protrusions to face downwards such that they could interfere with the braking mechanism.



Do not ride on or tow the Type A Trolley.



Do not use the Type A Trolley for any other purpose than as described in the introduction.



Do not hold off the Brake Handle using mechanical means.

3 TECHNICAL SPECIFICATION

3.1 Physical Data for the Type A Trolley

	Trolley Assembly (standard)	Trolley Assembly (LUL)
Width	1685 mm	
Length	1220 mm	
Height	304 mm (without handles)	
Total Mass	90 kg	104 kg
Centre of mass	Central	

3.2 Load Specification

- Maximum load capacity 2,000 kg UDL¹

¹ Note that all loads up to and including the maximum shown should be uniformly distributed. The load must be positioned equally about the Trolley centre.
When used on Network Rail infrastructure, the maximum SWL is 1,000 kg UDL.

- Maximum load capacity of the Crane Attachment (when fitted) 420 kg SWL

Physical Data for the Type A Trolley Accessories

3.3 Physical Data for the Type A Trolley Crane Attachment

	Crane Attachment
Width	305 mm
Length (including clamp screw)	1420 mm
Height (from trolley deck)	1070 mm
Total Mass	63 kg
Mass of heaviest component	32 kg
Centre of mass	Central

3.4 Product Compliance

The standard Type A Trolley complies with RIS-1701 and BS EN13977.

4 STORAGE AND TRANSPORTATION

4.1 Storage



The Type A Trolley and any associated spare parts should be stored in a dry and secure environment. Safety critical spare parts must be stored in a dry, secure and controlled environment.



The maximum number of Type A Trolleys that can be stacked during storage is 8.

4.2 Transportation



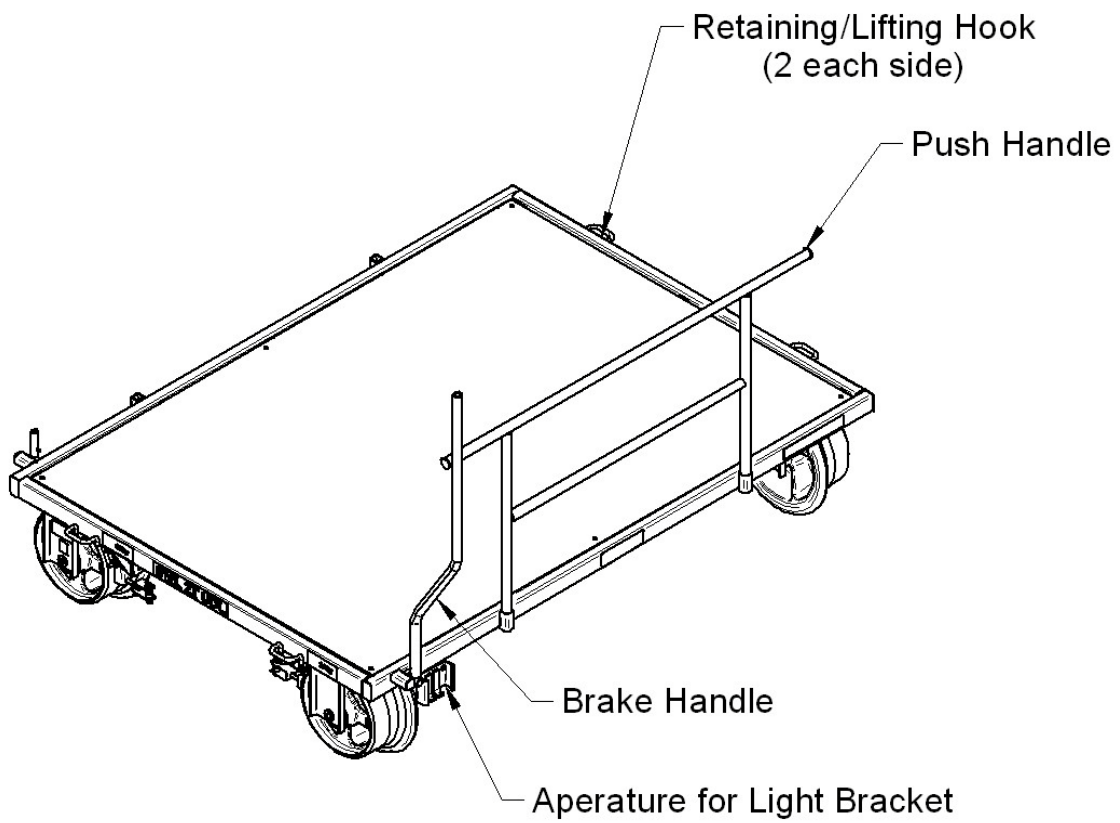
During transit the Type A Trolley should be secured, and kept away from all electrified lines. Ensure that any method used to secure the Type A Trolley in/on a vehicle applies the load uniformly and does not exceed the SWL. Do not use excessive force when using a ratchet type loading strap. Two Retaining/Lifting Hooks are provided each side for use during transit. These can be used to retain the Type A Trolley and for lifting with suitable lifting equipment.



The maximum number of Type A Trolleys that can be stacked during transit is 5, provided that this is within the vehicles operating capabilities. Note that the load must be secure and stable.

5 GENERAL LAYOUT

The following shows the main components of the Type A Trolley.



6 OPERATING INSTRUCTIONS

The following procedure outlines the correct method for operation.



Always push, never pull, the Type A Trolley.



All work should only be performed by competent personnel.



Always follow local regulations.



Observe Manual Handling Regulations.

6.1 Mounting on the Track

1. It is recommended that the Type A Trolley is lifted by four persons.
2. Check that Type A Trolley has a unique serial number, is identified with the SWL and the 'Next Brake Test Due' has not expired.
3. Check that the brakes are in good working order. To do this, access the braked wheels and rotate with one hand. The wheels should resist movement. If in doubt do not use until it has been checked by a competent person.
4. Ensure that all four wheels are in contact with the rail head.
5. Fit the Brake Handle and Push Handle onto the Type A Trolley at the opposite end to the intended direction of travel.
6. Check the brakes are working correctly – they are fail-safe so should be on when the Type A Trolley is stationary.

6.2 Loading the Type A Trolley

1. Ensure that the SWL is not exceeded.
2. Ensure that the load is stable and is uniformly distributed over the Type A Trolley loading area.

3. Ensure that the load does not overhang the Type A Trolley sides and infringe on the track gauge.

6.3 Using the Type A Trolley

1. Move the Brake Handle sideways to release the brakes, and push to move the trolley. Use the Push Handle to aid movement.
2. Releasing the Brake handle will then re-apply the brakes.

6.4 Fitting the Red Light

1. The Red Light is located in 2 positions on the Type A Trolley. There are no additional fixings required as they slot into the Light Brackets fitted within the apertures, as shown below.



2. The Red Lights have to be removed to switch them on and off.

6.5 Using the Crane Attachment (optional)

The following procedure outlines the correct method for operation.



Wear eye, feet, head and hand protection when using the Ironman. Additional Personal Protective Equipment (PPE) should be worn according to local regulations.



Ensure any slings or chains to be used are suitable and that valid test certificates are available.



Before attempting to lift a load, ensure that all component parts of the crane are properly assembled.



Before attempting to lift a load, ensure that the trolley is securely strapped down to the rail.



Only freely suspended loads are permitted.



When the trolley is in motion, the crane must be stowed in it's travelling position.



Ensure familiarity with all controls before attempting to operate the crane.



All work should only be performed by competent personnel.



Always follow local regulations.



Observe Manual Handling Regulations.



Do not commence slewing until the load is suspended.



Do not stand under any suspended load or within the crane's slewing range.



Do not leave the crane or move the trolley with a suspended load.



Do not attempt to over load the crane.

Attachment of the Crane Attachment to the Type A Trolley

1. Ensure that all 4 of the main components are available.
2. Check crane, rope and attachments for any obvious signs of damage. The crane must not be used if any damage to the rope is apparent.
3. It is recommended that the Crane attachment is assembled by two persons.
4. Strap the Type A Trolley to the rail, using the straps included with the crane attachment, as shown below.



5. Mount the Crane Attachment base to the Type A Trolley in position between the two push handle mounting tubes, as shown below.



6. Secure the Crane Attachment base to the Type A Trolley by turning the threaded handle, as shown below.



7. Mount the Crane Attachment arm onto the base, as shown below.



8. Ensure that the locking pin is located properly as shown below.



Lifting a Load with the Crane Attachment

1. Release the locking pin and place it in its stowing position, as shown below.



2. Position the crane over the load to be lifted.
3. Connect the correct lifting equipment to the crane hook in accordance with the manufacturer's instructions.
4. Lift the load by turning the winch handle in the direction specified at the base of the handle, as shown below.



5. Once the load has been lifted to the correct height, the crane can slewed and the load lowered into position on the deck of the trolley, as shown below.





7 MAINTENANCE



All work should only be performed by competent personnel.



Always follow local regulations.



Observe Manual Handling Regulations.



Brake tests must be performed following any repair or replacement of the brake system or components, including brake pad replacement.

For components that require replacing please refer to the Type A Trolley Spare Parts List. Please contact Permaquip Ltd for additional copies.

Note that:

- **The Maintenance and Testing of the Brakes, Wheels and Axles are defined as Railway Safety Critical under CoP0010, Railway Safety Critical Maintenance Elements of Small Plant and Equipment.**
- **The Maintenance and Testing of the Brakes are covered under CoP0018, Rail Mounted Manually Propelled Equipment. The brakes must be maintained and tested at a periodicity of no greater than 3 months.**

7.1 Wheels and Axles

1. With the brakes released using the Brake Handle, check the wheels rotate freely.
2. Resistance to rotation or rocking of the wheel on the axle indicates either a worn axle or a cracked bearing. The wheel bearings are sealed for life and do not require lubrication. There should be no more than 2.0mm end float of the wheels.
3. Check the wheel profile for wear, cracks or damage. Replace damaged or worn wheels.
4. Check the Axle Retaining Pin is securely in place.

7.2 Brakes

1. Remove the brakes and check the brake linings. Remove any dirt or oil from the working surfaces. The recommended minimum thickness of the brake pad lining is 2.5mm.
2. Check the operation of the brake to ensure that the brake rod, mechanism and adjusters are in good condition.
3. Lubricate all brake pivot pins, brake rod and adjusters with a general purpose lubricant.
4. Check that both brake shoes apply and release simultaneously. The adjusting screw enables this to be achieved. Once both of the brakes are in contact with their wheels, the cable should have no tension.
5. Test the brake efficiency using the Brake Test Tool. Ensure that the wheels and brake pads are dry. The brakes should be tested at all four quadrants of each braked wheel and in both directions. The average torque at which the wheel resists movement should be equal or greater than 80 Nm.
6. If the brake torque is not achieved, check and adjust the brakes as described previously and repeat the tests.
7. Fix a 'Next Brake Test Due' label onto the Trolley. The date specified must be within 3 months. Complete the Maintenance Brake Test Record Sheet.

7.3 Type A Trolley Assembly

1. Check that the frame structure is free from deformation and that all welds are in good condition.
2. Ensure that the axle mounts are straight and are in-line.
3. Check that all four wheels make contact with the rail head when in an unladen condition.
4. Check that the brake rod and chain/cable assemblies are in good condition.
5. For standard Type A Trolleys fitted with wooden decks, check the condition of the wood. Decks that are loose, de-laminated, cracked or have holes need to be replaced.
6. For LUL Type A Trolleys fitted with aluminium decks, check the condition of the aluminium. Decks that are loose, damaged or deformed need to be replaced.
7. Check that the Retaining/Lifting Hooks are in good condition, that they are fit for purpose and that the lifting SWL label is fitted next to each of the Hooks.

7.4 Red Light

1. To replace the batteries within the Red Light, remove the 4 off cross-headed screws from the rear of the light assembly and lift off the rear cover.
2. Replace the 2 off batteries to the correct specification, noting the polarity.
3. With the gasket in position replace the rear cover and secure using the 4 off screws.
4. Discard the old batteries according to local and national regulations.
5. Check the light operation using the rotary switch on the rear cover.
6. Replace into the Type A Trolley.

7.5 Crane Attachment

To ensure safety and reliability, the following inspection/servicing procedures should be applied when in use:

- Check that the main components have no deformation or cracks.
- Check that the movement of the clamping components is smooth and free from sticking.
- Lubricate the clamping screw thread.
- Lubricate the join between the two main components to allow smooth slewing.

8 TEST SPECIFICATION

8.1 Type A Trolley

The Type A Trolley should be tested to the following specification after the Maintenance procedures have been completed where necessary.

Note the testing of the Brakes is defined under the Maintenance section of this User Guide. This is important as the brakes must be checked and maintained before testing.

The Type A Trolley should be tested to the following specification after any structural repairs have been carried out, or when the Type A Trolley has been damaged.

1. Note the Serial Number of the Type A Trolley.
2. Mount the Type A Trolley onto a test track and ensure the brakes are on.
3. Measure the height between the track and the centre position of the Type A Trolley frame on all four sides.
4. Lower a 2,500kg calibrated test mass onto the trolley (1.25 x 2,000kg SWL).
5. Leave for 10 minutes.
6. Remove the test mass.
7. Measure the heights again. There should be no more than 1.5mm difference in the two measurements.
8. Check the frame has no deformation or weld damage.

The standard Type A Trolley should also be tested to the following specification in addition to that above.

1. The conductivity between the wheels and frame of the Type B Trolley needs to be checked using a calibrated resistance meter.
2. Zero the meter so the display reads 0.00Ω.
3. Connect one lead to an unpainted section of the Type A Trolley frame. Connect the other lead to one of the wheels. The measured resistance should be less than 0.15Ω.

The LUL Type A Trolley and other Type A Trolleys fitted with insulated wheels should also be tested to the following specification in addition to that above.

1. The resistance of the insulation of the Type A Trolley needs to be checked using a calibrated resistance meter.
2. Ensure the brakes are on.
3. Check that the meter display reads 1Ω or less when the two leads are connected together.
4. The resistance between the trolley frame and wheels needs to be checked. Connect one lead to an unpainted section of the Type A Trolley frame. Connect the other lead to one of the wheels. The measured resistance should be at least $5\text{ M}\Omega$.
5. Repeat for the remaining three wheels and record the four measurements taken.
6. The resistance between the wheels needs to be checked. Connect one lead to one of the wheels. Connect the other lead to the opposite wheel that sits on the opposite rail head. The measured resistance should be at least $5\text{ M}\Omega$.
7. Repeat for the remaining pair of wheels and record the two measurements taken.

8.2 Crane Attachment

Lifting equipment should be inspected, maintained and tested by a competent person in accordance with statutory requirements.

The Crane Attachment should be annually tested to the following specification after Maintenance procedure has been completed.

1. Visually check that there is no component damage or distortion.
2. Mount the Crane Attachment onto a Type A Trolley as described in section 6.5 of this manual.
3. Using the correct lifting equipment, lift a test weight of 525 kg ($1.25 \times \text{SWL}$) clear of the floor.
4. Maintain this load for a period of 10 minutes.
5. Slew the test weight through the full slewing arc of the Crane Attachment
6. Check all components to ensure there is no weld cracks, permanent deformation, paint flaking or damage which has resulted from the test.
7. Test all other lifting equipment in accordance with current legislation.

Permaquip Ltd offer a testing and maintenance service – please contact us for further details.

9 TRAINING

Persons that will operate, maintain and test the Type A Trolley should undertake a programme of training. This programme of training should include the following aspects:

- Product familiarisation.
- Component location and function.
- Product preparation.
- Safe and Correct Use.
- Maintenance.
- Testing.
- Practical experience.

Permaquip Ltd offer a training service – please contact us for further details.

10 ORDERING

DESCRIPTION		PADS Cat. No.	PART NO
Type A Trolley (Standard)		PA05/03387	23716
Type A Trolley (LUL)		LUL Cert. Number PE007/123A	27788
Type A Trolley (Standard with insulated wheels)			27786
Crane Attachment			28725
Brake Test Tool			34712
Red Light			040820218

For spare parts please see the Type A Trolley Spare Parts List.

Please contact Permaquip Ltd for further information and support.
Our contact details are shown on the front of this User Guide.
In order to avoid delay and to have your orders fulfilled promptly,

Please telephone, e-mail, fax or write giving the following information:

- 1. Company name.**
- 2. Contact details.**
- 3. Invoicing and delivery details.**
- 4. Purchase order number.**
- 5. Method of delivery.**
- 6. Part number, description and quantity for each item.**

Your Notes

