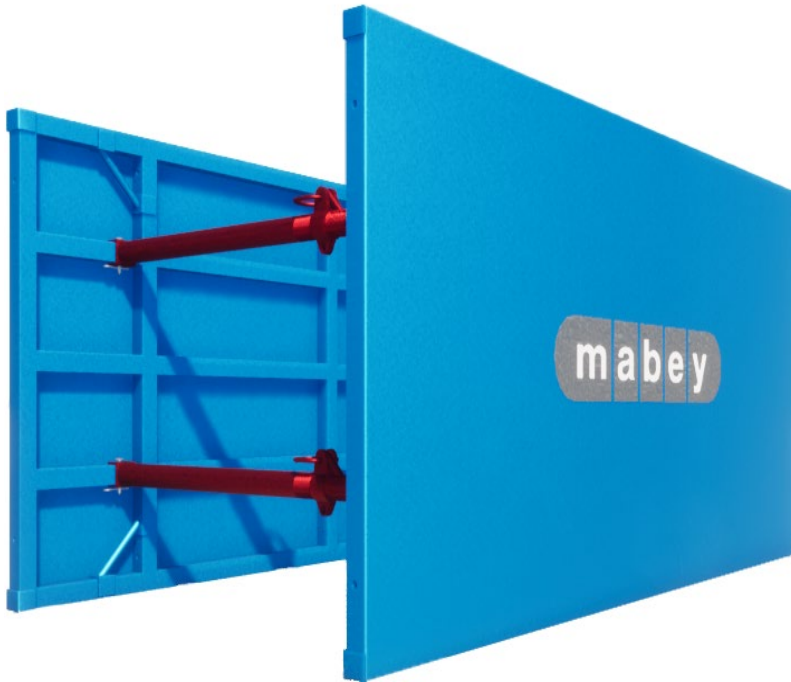


PRODUCT USER GUIDE

STANDARD BASE SHIELD



Configuration Available

- ▶ 2-Sided Trench Box
- ▶ 4-Sided Trench Box
- ▶ 2-Sided Wing Return Manhole Boxes

Introduction

This booklet is intended to provide basic information for users of the Mabey Hire Ltd Aluminium Trench Shields system and to draw the client's attention to the practical aspects of Aluminium Trench Shields operational procedures and basic maintenance which need to be considered when compiling method statements, risk assessments and safe system of works. It is assumed that clients are familiar with general safe practices applicable to this type of work.

The Aluminium Trench Shields are intended to be used in trenches for which the excavation is being undertaken with small excavators that do not have the lifting capacity to work with standard, heavier, trench box systems. All major components of the Aluminium Trench Shield system have handling and lifting points for safe slinging. It is not intended for other purposes.

Aluminium Trench Shields are not normally suitable for use in water bearing soils or in trenches crossed by frequent services. Trench Shields systems should not be used in seawater applications without prior consultation with the Mabey Hire Ltd. Engineering Department.

It is advisable, before commencing installation, to read the notes below and to become familiar with the procedures involved when using the Aluminium Trench Shield.

IMPORTANT NOTES

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

These instructions form guidance for the typical installation of Trench Box Equipment. 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,

All hire for this equipment will usually be accompanied by a general arrangement or scheme specific drawing. This must be read in conjunction with these instructions.

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1. General Guidance notes

Safe System of Work

Assuming that the appropriate Aluminium Trench Shields has been selected for use, the Health and Safety at Work Act requires that a safe system of work is adopted to carry out the works on site.

These guidance notes are intended to draw the client's attention to practical aspects of Mabey Hire Pty. range of Aluminium Trench Shields components during use and basic maintenance which need to be considered when completing method statements for a safe system of work.

Access, Hard standing Areas and Site Storage

- Suitable firm, level, dry areas should be made available on site for storage and pre-assembly work.
- Suitable lifting equipment of adequate capacity should be provided for off-loading and installation.
- Slings should always be carried out by suitably experienced and competent personnel.
- The weights of components and assemblies are given in this guide.
- Large components should be stacked, nested with suitable timber dunnage, max 3no panels per stack.
- Smaller components should be stored in skips/bins.

Personnel

The Management of Health and Safety at Work Regulations require that personnel deployed are suitably trained, experienced, and supervised by a competent person.

The main activities associated with Aluminium Trench Shields use are:

- Unloading and loading the delivery vehicle.
- Pinning components together.
- Slings and lifting the Aluminium Trench Shields into and out of the trench.

Plant and Lifting Equipment

A suitable appliance is required for off-loading, installation, and re-loading of equipment, together with lifting chains, available from Mabey Hire Pty Ltd., of suitable length and capacity and with current certification.

WARNINGS:

- If Aluminium Trench Shields components are to be lifted in or around an excavation, the appliance should be located at a safe distance from the edge of the excavation and the lifts and radii checked against the safe lifting capacities of the appliance. A surcharge for the appliance must have been allowed for in the excavation brief / design.
- No more than one assembled component must be lifted at a time.

Sling Warning

If a sling is to be used on an excavator, be aware of the following:

- It is very important that a means of allowing the sling to swivel be introduced above the master (top) ring. This will allow the sling, and in particular the master ring, to turn and align with the load.
- Without a swivel arrangement, the load may severely twist the master ring, resulting in damage or failure.
- All lifting accessories attached to the excavator lifting point must hang freely and be free to move at all times.

Small Plant, Tools and Lifting Chains

- Lifting Chains of suitable length and capacity complete with current certification. Typically for Aluminium Trench Shield a set of 4 leg 7mm chains with 4m leg length.

Access & Egress and Edge Protection

- Install the edge protection as soon as possible before entry into the excavation.
- A competent person should inspect the means of access and egress regularly.

During Installation Works

- Check that all bolted connections remain tight.
- Check that all pinned connections are intact and complete with an 'R' clip, where required.
- Avoid striking equipment or loading it inappropriately.

After Installation Works

Each excavation must be inspected daily before personnel begin work.

Return of Equipment Off-Hire

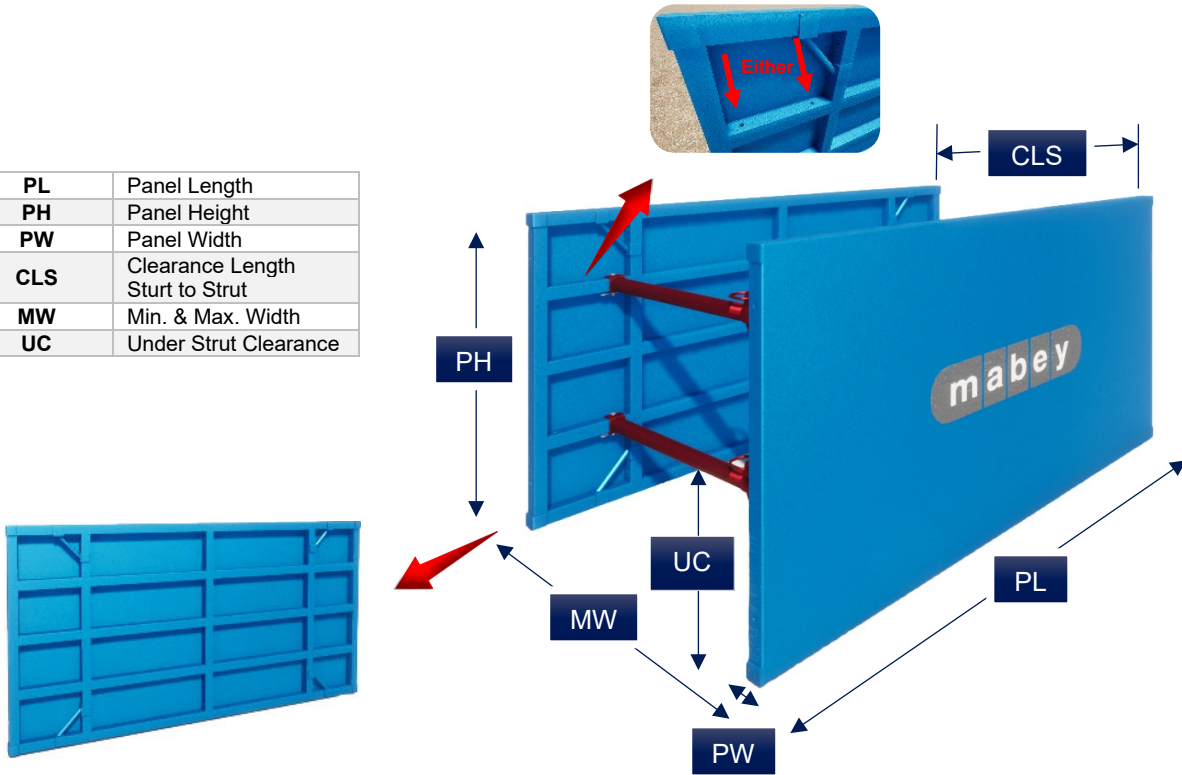
Clients should ensure that on removal, the equipment is returned clean and assembled as supplied.

Ensure all equipment is loaded to the satisfaction of the vehicle driver and is securely restrained to the vehicle bed.

2. Component Identification

2.1 Shield Panels Details

PL	Panel Length
PH	Panel Height
PW	Panel Width
CLS	Clearance Length Sturt to Strut
MW	Min. & Max. Width
UC	Under Strut Clearance



Panel Type	Panel Length PL (mm)	Panel Height PH (mm)	Panel Width PW (mm)	Clearance Length CLS (mm)	Min Width MW (mm)	Max Width MW (mm)	Under strut Clearance UC (mm)	Safe Working Load (kPa)	Unit Weight (kg)
Standard Base	2,400	1,200	56	2,100	600	1,800	300	20	130

2.2 Extension Connector & Pin



Extension Connector
Weight: 2.0 kg
Dimensions: 35x35x3mm
Length: 400mm



Connector Pin & "R" Connector
Weight: 0.1 kg
Dimensions: ø12mm Shank x 90mm Long

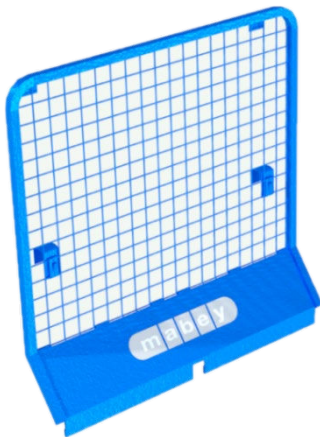
2.3 Strut Details



The strut length is changed by re-locating the pin for coarse adjustment and by screwing the collar in and out for fine adjustment.
 Ensure that the inner is always a minimum of 100mm inside the strut outer.

Accrow struts	Weight
0.6m to 0.9m Accrow	10 kg
0.9m to 1.8m Accrow	13 kg

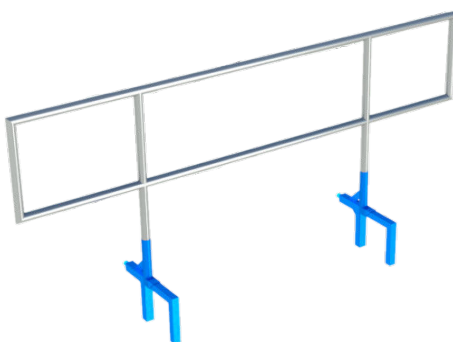
2.4 Protection Components



Sheet Guard Barrier
 Weight: 21.5 kg



Access Platform
 Weight: 110 kg



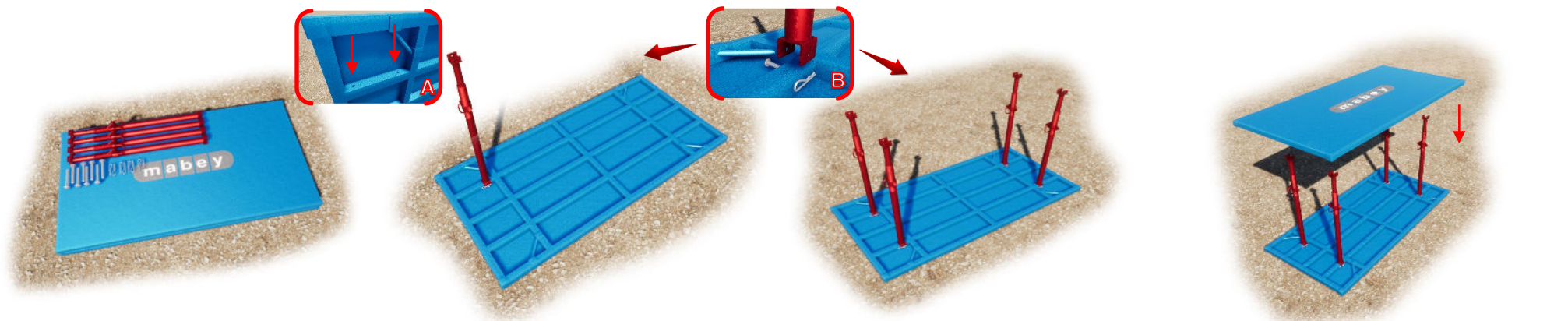
Aluminum Handrail

Length	2.5m	3.0m	4.0m
Weight	25 kg	33 kg	40 kg



Davit Arm
 Weight: 42 kg

3. Typical Site Assembly - Lifting & Installation - Shield

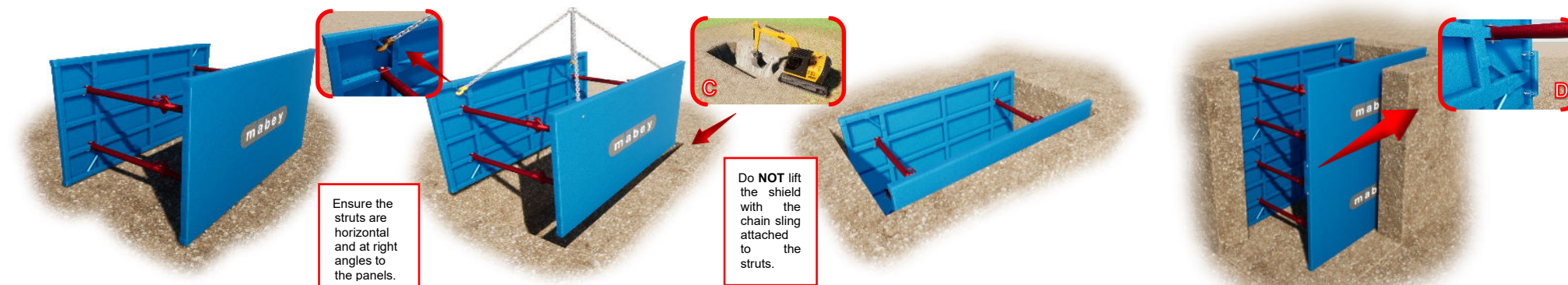


1. Remove panels from the truck by lifting panels with 4 point lift lugs or a forklift. The strut length is changed by re-locating the pin for coarse adjustment and by screwing the collar in and out for fine adjustment.

2. Place a panel flat on the ground with the collars/channel/ribs facing up. Connect the struts to the panel using the pins and clips only in the location shown in Detail A and as shown in Detail B.

3. The "R" clips should always be on the inside of the channel for any shields to protect them. Check all struts are properly attached and secure before place and connect the second panel

4. Lift the second panel onto the struts and secure with the pins and clips or lay the second panel on the ground and connect.



Ensure the struts are horizontal and at right angles to the panels.

Do NOT lift the shield with the chain sling attached to the struts.

5. Lift the unit slowly into a standing position using either a four-leg chain or sling connected to the lifting lugs provided (2 per panel at the top edge).

6. Check to make sure all pins and clips are secure. Once the trench is dug to the required width and depth, lift the shield(s) using the four-leg chain sling attached to the four lifting points at the top of the uppermost pair of panels and place the shield into the pre-dug trench

7. Once the shield is in place, remove the chains or slings. Leave the top of the shield 100mm above the surrounding ground level. If the base of the shield is not on the bottom of the excavation, GENTLY push down with the machine on the corner of each panel to make sure the shield is safely in place.

8. If the trench depth requires multiple shields, they can be connected on top of each other using the "Extension Connector" bracket and its clips, as shown in Detail "D". Once the shield is in place, remove the chains or slings. Ensure there are NO large voids between the panel and the trench sides as this may allow the shield to sway sideways.

4. Extraction of a Standard Base Box



To extract the shield from the trench, attach the chain sling as for installation (using the four lifting points on the shield) and lift the shield vertically out of the trench.

If the shield is tight in the trench, place the lifting chains on the two lifting lugs at one end of the shield. Lift this end of the shield slightly and then reposition the chains to the other end of the shield and lift slightly.

Continue to swap the chains from one end of the shield to the other, lifting slightly each time until the shield is loose in the trench and can then be removed in the normal fashion using all four legs of the sling on the top four lifting points.

5. General

Basic Maintenance

- ▶ Regularly check that all pins are in place and 'R' clips fitted.
- ▶ Replace damaged components.
- ▶ Remove debris from Pins and 'R' clips.
- ▶ Avoid laterally loading the struts-either by hanging or propping from them or accidentally striking them with site plant.

Do's and Don'ts

- ▶ DO use a ladder to enter the working space between the struts of the shield.
- ▶ DO wear a safety helmet to minimize the risk of head injury.
- ▶ DO ensure that the excavator operator is aware of your intentions.
- ▶ DO ensure that the unsupported part of the trench is safely battered.
- ▶ Do NOT climb up or down the struts.
- ▶ Do NOT use any unsupported part of the trench for access.
- ▶ Do NOT move the shield when personnel are inside it.

Since our policy is one of continual improvement, components may vary in detail from the descriptions given in this publication.

While information in this Guide is correct at time of printing, product specifications and product availability are subject to change without further notice. Please visit our website for the most up to date information. Job site photos are strictly intended for general product illustration only and may not comply with all applicable safety standards or site requirements. Specification data has been taken from manufacturers' serialised specific tabulated data.

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