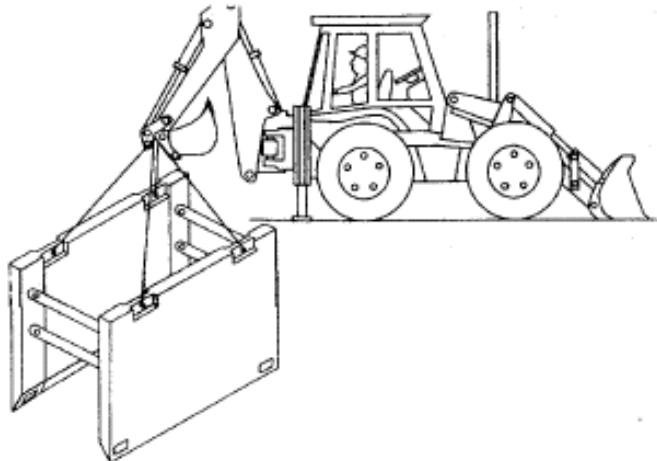


## Manhole Boxes

### 1.0 General Information

- Manhole boxes are a simple, robust, two sided mechanical excavation support system with integrated return/end panels designed to be installed by an excavator utilising the dig and push technique.
- They are suitable to provide safety for manhole construction.
- They are manufactured and designed in compliance with BS EN 13331: 2002 PARTS 1 and 2 Trench Lining Systems.
- Boxes are fabricated from Grade S355 steel.
- Lightweight box suitable 20kN/m<sup>2</sup> panel resistance SWL.
- They are ideal for handling by small sized excavators.
- Clearance under lower strut is 900mm.
- Marwoods recommends that the operating radius of the excavator should be checked for boxes wider than 1055mm.**
- A risk assessment must be completed prior to the use and suitability of this equipment.**
- Marwoods also recommends that a suitable 4 leg lifting chains is used when turned upright (10mm x 6.7 tonne).**



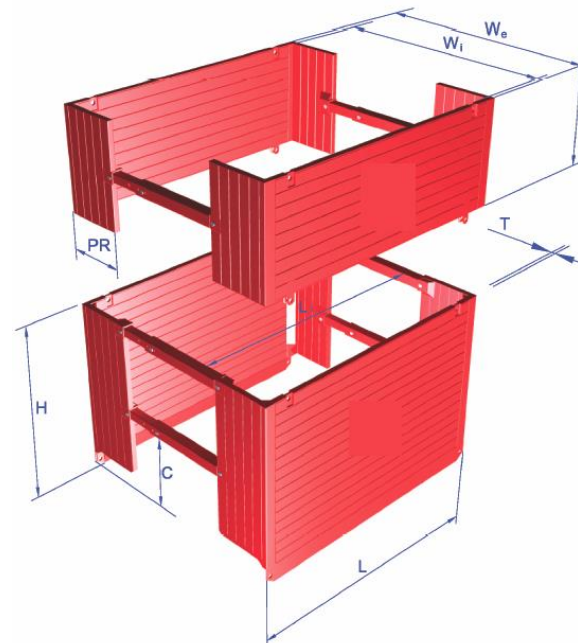
### 1.01 Trenchshore round sockets component list

	Size (mm)	Weight (kg)	Struts	Struts pins & R clips	Connector pins & clips
Base Unit	2500 x 2000 3000 x 2000	990 1200	4	12	N/A
Top Unit	2500 x 1000 3000 x 1000	550 615	2	6	4

### 1.02 MGF square sockets component list

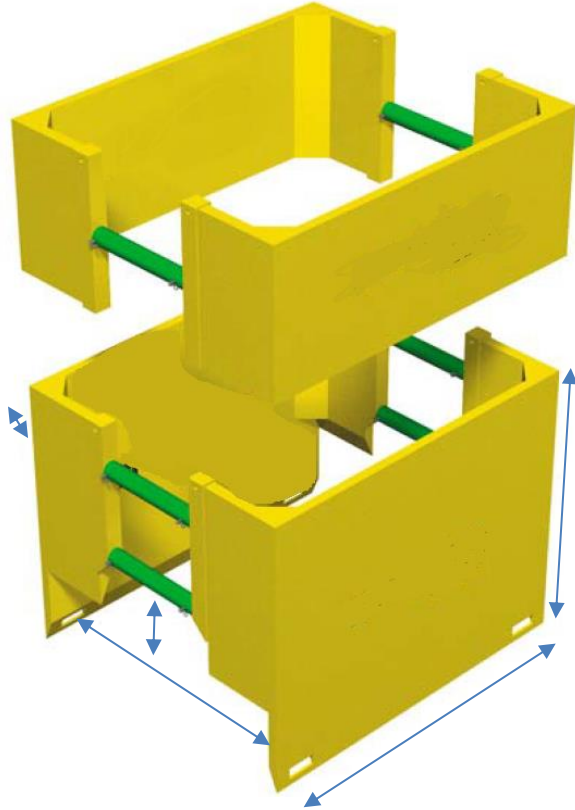
	Size (mm)	Weight (kg)	Struts	Struts pins & R clips	Connector pins & clips
Base Unit	2500 x 2000	1540	4	12	N/A
Top Unit	2500 x 1100	938	2	6	4

### Dimensions of MGF Manhole Boxes



Description L x H	2500 x 2020 Base	2500 x 1100 Top	3000 x 2020 Base	3000 x 1100 Top
Alternative Name	Mini Base	Mini Top	Mid Base	Mid Top
Max Depth** (m)	4.22	N/A	4.22	N/A
Panel Thick/ Weight T(mm)/(kg)	60/ 684	60/ 414	60/ 767	60/ 459
Approx Assembled Weight (kg)	1540	938	1692	1018
Internal Trench Width* Wi(mm)	2380	2380	2880	2880
Trench Width* We(mm)	2500	2500	3000	3000
Clearance Below Bottom Struts C(mm)	923	N/A	923	N/A
Clearance Between Struts Li(mm)	2251	2251	2751	2751
Panel Return PR (mm)	670	670	670	670

## Dimensions of Trenchshore Manhole Boxes



Type	Length (m)	Height (m)	Internal Width (m)	Panel Thickness (mm)	Clearance between struts (m)	Clearance under struts (m)	Panel Weight (kg)
2.5m Manhole Base	2.5	2.0	2.38	60	2.35	1.2	427
2.5m Manhole Top	2.5	1.0	2.38	60	2.35	-	225
3.0m Manhole Base	3.0	2.0	2.88	60	2.87	1.2	487
3.0m Manhole Top	3.0	1.0	2.88	60	2.87	-	280

## 2.0 Safety Instructions

- A land and ground survey must also be carried out to check also for any utilities (electrical, telephone cable and gas or water supply) below the manhole.
- Only a competent person should be allowed to assemble and check manholes and accessories.
- The competent person must supervise the installation, alteration or removal of excavation support.
- Continually monitor groundwater, soil and air by sight, smell and use gas detection equipment when working in excavation.
- The operative should be trained and assessed competent.
- The operating instructions should be always available.
- Correct manual handling techniques must always be used and PPE such as hard hat, safety gloves and goggles must be used. (determined by risk assessment)
- Marwood Group Ltd recommends the use of gas detector and breathing equipment.
- Boxes should only be used in the configurations shown in section 1.0.
- Boxes should not be used in very weak ground (especially very soft clays and peats) or where significant groundwater is present.
- Boxes are not suitable for usage in trenches with multiple service crossings.
- Boxes are not normally suitable for usage where ground movement is an issue and are therefore not recommended for use in live carriageway situations or adjacent to existing buildings / structures.
- Lifting of the box above the base of the excavation is strictly prohibited.
- Boxes should not be left in-situ for extended periods within cohesive soil as adhesion on the panel surfaces may prevent safe removal.
- Ladders must be present around the excavation to provide safe access and egress from the trenches. (usually about 8 metres or less)

### 3.0 Installation Guidelines for using the Manhole Box

1. Always install/remove the system from a position of safety. If working from an unsupported edge a full risk assessment should be carried out for the operation.
2. Excavate approximately 1.0m below existing ground level to the overall plan size as required.
3. Generally, the Manhole Boxes are not pre-assembled to the required size prior to delivery on site.
4. Recommended assembly method is to lay one section face down on the ground with the spigots pointing upwards. Locate the struts in the spigots and secure with pins and R clips. Next install the second section with the face upwards and locate the downward facing spigots onto the free ends of the struts. Secure with pins and R clips.
5. Once, assembled, Place the assembled Manhole Box in the excavation using the 4-Leg Chain. A competent person must fully examine all lifting points for damage, before all lifting operations. Ensure that the panels of the Manhole Box are vertical at rest.
6. Progressively install the Manhole Box by a 'cut and lower' technique, using the excavator to apply downward pressure to each corner of the Box.
7. If the required excavation depth is greater than the height of a single Manhole Box, Top extension units should be used. When the top of the Manhole Box Base is at or just above existing ground level, position the assembled Manhole Box Top on the installed base unit, connecting each corner of the assembly using the corner connector pins and R-clips.
8. Continue to install the Manhole Boxes until formation level is achieved. If required, a second Top unit can be used to increase the height of the box further. Marwoods do not recommend that more than 2 Top units be used with any one Base unit.
9. When the manhole has been constructed, the Manhole Box is removed by applying a sudden upward force to break the friction/adhesion between the panels and the soil. The Manhole Box should be progressively withdrawn, as the excavation is backfilled.

***Note: As the handling of this equipment has an increased risk with it. Care must be taken to avoid the equipment slipping causing injury or trapping.***

**Note: Marwood would always recommend the use of Temporary Edge Protection Systems legislation BS EN13374 which keeps operators safe from open excavations call your local depot with your requirements.**

### 4.0 Maintenance of Manhole Boxes

- A visual inspection is required to be carried by a competent person before and after its use.

- Any concrete or mud on the boxes or between the struts must be cleaned.
- Any distortion, damage or security concerns about the boxes or its accessories must be reported to the competent person and the box must not be used until it is determined safe to do so.
- Make sure that the connector pins and R-clips are in good condition.

**This equipment must not be modified.**