

A

78-95kg max.

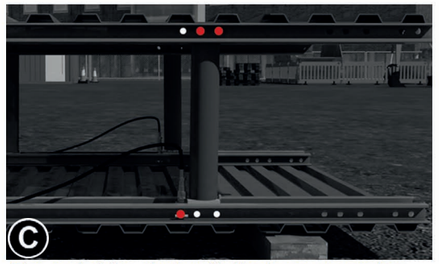
GRP Trench Boxes provide shoring solutions for excavations up to 1500mm deep, incorporating single acting hydraulic struts, supporting trench widths from 620mm to 1420mm. At 1.5m in length, the trench box provides a generous working area.

ASSEMBLY



B

Place paired hydraulic struts inside the rails, with the male hydraulic coupling facing the top of the panel. Secure in place with pins and R-clips. Place the top panel over the struts and connect as previous.



C

The end of the struts with the hose connectors are secured with a single pin through the upper hole. The opposite end is pinned through two bottom holes, both panels will be flush and unit is now locked from scissoring.

INSTALLATION



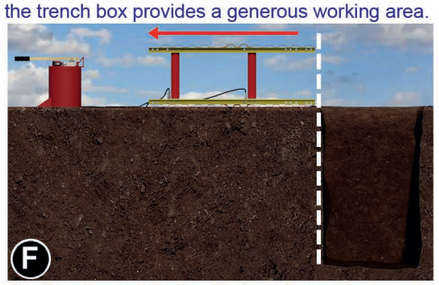
D

Hand dig or excavate the trench to the required designed dimensions and batter the ends whenever possible. Inspect to ensure the faces are stable, do not stand directly over unprotected edges.



E

GRP Trench Boxes can either be installed with a mini excavator or by hand. This SSoW will demonstrate the procedure manually. Simply replace steps H & Q by installing and extracting using a suitably rated four leg chain.



F

Position the unit flush with the edge of the trench with the handling hole facing away from the trench. Connect the bucket pump to the hydraulic struts via the supplied two-way bridle and hoses to the male quick release valves.



G

Connect suitable lowering slings/chains through the handling holes, pull tight and ensure a stable footing. Operatives should consider the weight of the unit configuration to ensure that this can be controlled safely with the resources available.



H

Carefully launch Trench Box until the weight of the unit is balanced on the edge of the skid/trench. Take any slack from the straps, carefully begin to raise the unit such that it's self-weight will begin pulling the system into the excavation.



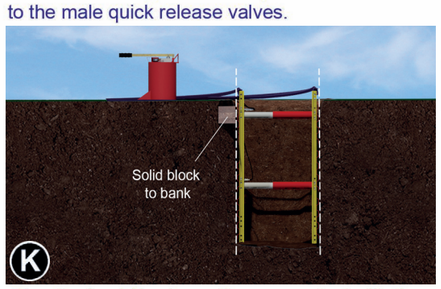
I

Pump out the hydraulic struts until the panels push tightly against the trench walls, continue to pressurise until the bucket pump registers between 400-750psi. The pressure gauge must hold and not indicate any loss in pressure.



J

Struts are fitted with a safety bleed off valve to prevent over extension. If hydraulic fluid is visible, either a longer strut is required or the width of the trench needs reducing. Hydraulic fluid is water soluble and biodegradable.



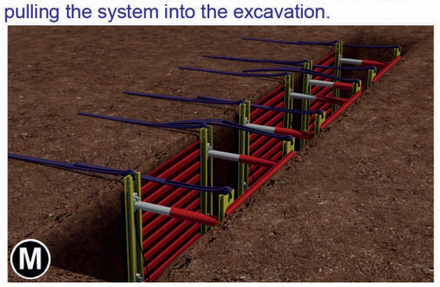
K

Panels should be in continuous contact with the trench wall, it is critical that any voids directly behind the hydraulic struts are packed out with timber or suitable fill material to ensure that the ground is fully pre-loaded.



L

Ensure final position of the unit sits square and vertical with continuous contact against the trench wall. Remove the hydraulic hose by prying off with the release tool.



M

Continue to install GRP Trench Boxes along the trench. The space between boxes depends upon the stability of the soil face. If the ground is stable then boxes can be spaced at a maximum of 1.5m apart, if unstable then reduce spacing accordingly.



N

Inspect the full installation ensuring that there is no evidence of instability along the unsupported faces and edges. It is now safe to enter the excavation via a ladder placed inside a GRP Trench Box.



O

When inside the trench, operatives should continually monitor the walls for change of conditions such as water seepage, excessive movement or cracks.

REMOVAL



P

During removal ensure that no operatives enter the trench unless they are within a zone protected by fully pumped out struts.
De-pressurise struts using an MGF release tool and prise panels until clear of the trench walls.



Q

If extracting with an excavator connect the lifting chains and carefully remove unit from trench. Alternatively, extract by hand by continuously backfilling and raising a corner at a time until the unit can be easily lifted out of the trench.

DISASSEMBLY

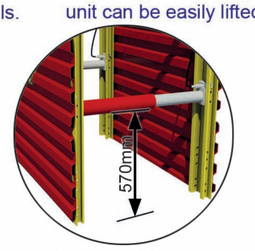


R

Never enter an unsupported trench, backfilling must be done from ground level. Reconnect hoses and empty hydraulic fluid back into the bucket pump. Disassemble in reverse order to B-C, remove loose dirt and return to MGF for inspection.



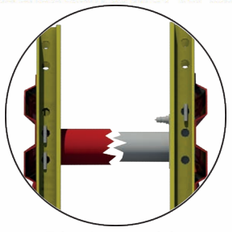
Handling Point Detail



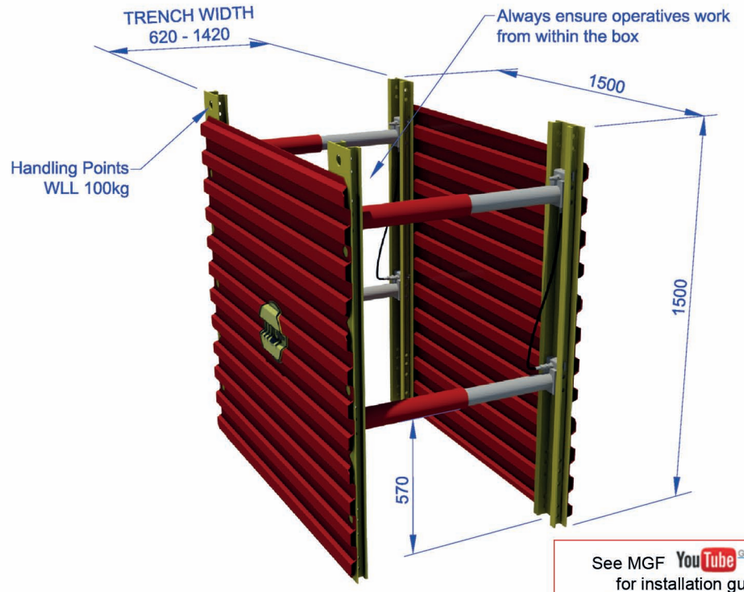
Understrut Clearance

SWL
16.5kN/m²

Safe Working Load



Pin Assembly



See MGF YouTube channel for installation guidance:
https://www.youtube.com/user/MGFLtd

UNCONTROLLED WHEN PRINTED
go to www.mgf.ltd.uk for latest version

GENERAL

Current health and safety legislation requires that construction equipment users formulate a site specific Safe System of Work (SSoW) to undertake the works they are proposing. This document is intended to provide sufficient product specific guidance on handling, installing, maintaining and removing MGF equipment to allow the SSoW to be compiled. It should always be read in conjunction with the product specific technical files and the site specific design information (including any residual risks to be managed on site) provided by MGF or others.

Users of this equipment should be both familiar with and competent in its use. MGF can provide toolbox talks and training material / advice on request.

MGF excavation systems can be supplied with a full range of site safety products and ancillaries. These products are designed to comply with current best practice and meet the requirements of the Lifting Operations & Lifting Equipment Regulations, Work at Height Regulations and the Confined Spaces Regulations.

⚠ SAFETY TIPS ⚠

1. MGF GRiPSHORE™ is a range of lightweight, GRP shoring products, ideal for manual handling and use in the utilities sector when either hand digging or using a mini excavator to form a trench in soils that do not collapse when using the dig and place install technique.

2. The GRP Trench Box system provides shoring solutions for excavations 1500mm in depth, incorporating single acting hydraulic struts to support trench widths ranging from 620mm to 1420mm.

3. Always inspect lifting points prior to every lifting operation and ensure all personnel are well clear of any lifting operation.

4. Beyond 1.0m depth, only access and work from within the boxes.
Never enter via ends/faces of an unsupported excavation at greater depths.

5. Always ensure all pins and retaining clips are correctly fitted prior to use.

6. Do not allow personnel within the trench whilst the excavator is digging.

7. Always work from a position of safety. Avoid working above on an unsupported edge, an unprotected edge or under a suspended load.

8. Do not pre-load/pump out hydraulics beyond 750 psi/50 bar using MGF bucket pump.

9. Always ensure operatives are safely out of the excavation and hydraulics de-pressurised before removal of units.

10. Specification and maintenance of non-hired equipment is clients responsibility.

⚠ GRP is flame retardant - avoid hot working
⚠ GRP Robustness - take care
⚠ Lightweight - in wind strap down
⚠ Adhesion loads when extracting by hand (manual handling)
⚠ Only work inside boxes

IF IN DOUBT ASK!

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Commitment • Innovation • Sustainability

Guidance for Safe Systems of Work: GRiPSHORE™: GRP Trench Box

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