

SIMPLE TO ASSEMBLE, LIGHT WEIGHT, ROBUST, TWO SIDED MECHANICAL EXCAVATION SUPPORT SYSTEM DESIGNED TO BE INSTALLED BY AN EXCAVATOR UTILISING THE EXCAVATE AND LOWER IN PLACE TECHNIQUE.

Normally selected for installing shallow utility pipes where ground movement is not critical and where the use of a small excavator restricts the max. weight of the systems specified. The system is generally suitable for trench depths of up to 2.42m, widths of up to 1.75m, pipe lengths of up to 2.5m and a pipe OD of up to 0.75m.

Fabricated from Grade 6082T6 120x60mm aluminium box sections to form 60mm thick panels, the system comprises trench box bases to which up to 1 No. trench box top may be added to achieve additional depth. The panels are propped off each other by robust struts available in a variety of lengths to suit the required width. All components in the system are connected together via simple pin and r-clip assemblies.

MGF can supply aluminium trench boxes with a full range of suitable lifting and extraction chains, Edgesafe edge protection panels, Laddersafe access platforms and GRP or wooden pole ladders, Endsafe protection panels, trench road plates and confined spaces regime equipment. Manufactured and designed in general accordance with BS EN 13331 : 2002 Parts 1 and 2 trench lining systems and BS 5975 (2008) code of practice for temporary works procedures and the permissible stress design of falsework.

PRODUCT NOTES

1. Boxes should only be used in the configurations shown by competent persons following MGF installation guidelines.
2. Boxes should not be used in very weak ground (especially very soft clays and peats) or where significant groundwater is present.
3. 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 existing buildings or structures.
4. Flying of the box above the base of the excavation is not recommended.
5. Box systems are heavy and great care must be taken in selecting a suitable excavator for handling, installing and extracting these systems.
6. If stacking panels on site, timber packers must be used to separate the panels.
7. Always ensure box strut on the base unit is fitted with horizontal strut lowest as shown in assembly drawings.
8. Boxes should not be left in-situ for extended periods within cohesive or very weak soils as earth pressures / adhesion on the panel surfaces may increase significantly with time requiring additional extraction forces to release the panels.
9. Always use MGF specified extraction chains to release an in-situ box from the ground prior to any attempt to lift the box out of the trench. Always use MGF specified lifting chains when lifting and handling the boxes or components. NB. If a box becomes stuck extraction forces of up to 100kN (10t) can be required to release each corner.
10. Prior to every lifting operation all lifting points must be carefully inspected by a competent person for evidence of damage.
11. Always enter trench box via a ladder located within the box and never from an unsupported edge.
12. During lifting or extraction operations ensure personnel are well clear of the equipment.
13. Ends of trench runs should always be battered back at a safe angle or closed off using sheets or Endsafe panels.



MGF GRP LADDER
See Section 8

MGF LADDERSAFE
See Section 7

MGF EDGESAFE
See Section 7

MGF ALUMINIUM TRENCH BOX TOP

MGF ALUMINIUM TRENCH BOX BASE



FOR SAFE SYSTEM OF WORKS GUIDANCE FOR MGF ALUMINIUM TRENCH BOXES:
mgf.ltd.uk/installation-guidance



STRUT POCKET PIN DETAIL

Telescopic struts are connected to the panel pockets using a pin and r-clip detail.



ALUMINIUM PANEL CONNECTOR DETAIL

Panels can be connected together using a connector piece that pins the panel struts together.



TELESCOPIC STRUT DETAIL

Telescopic strut inners and outers are connected using a pin and r-clip detail.



HANDLING POINT

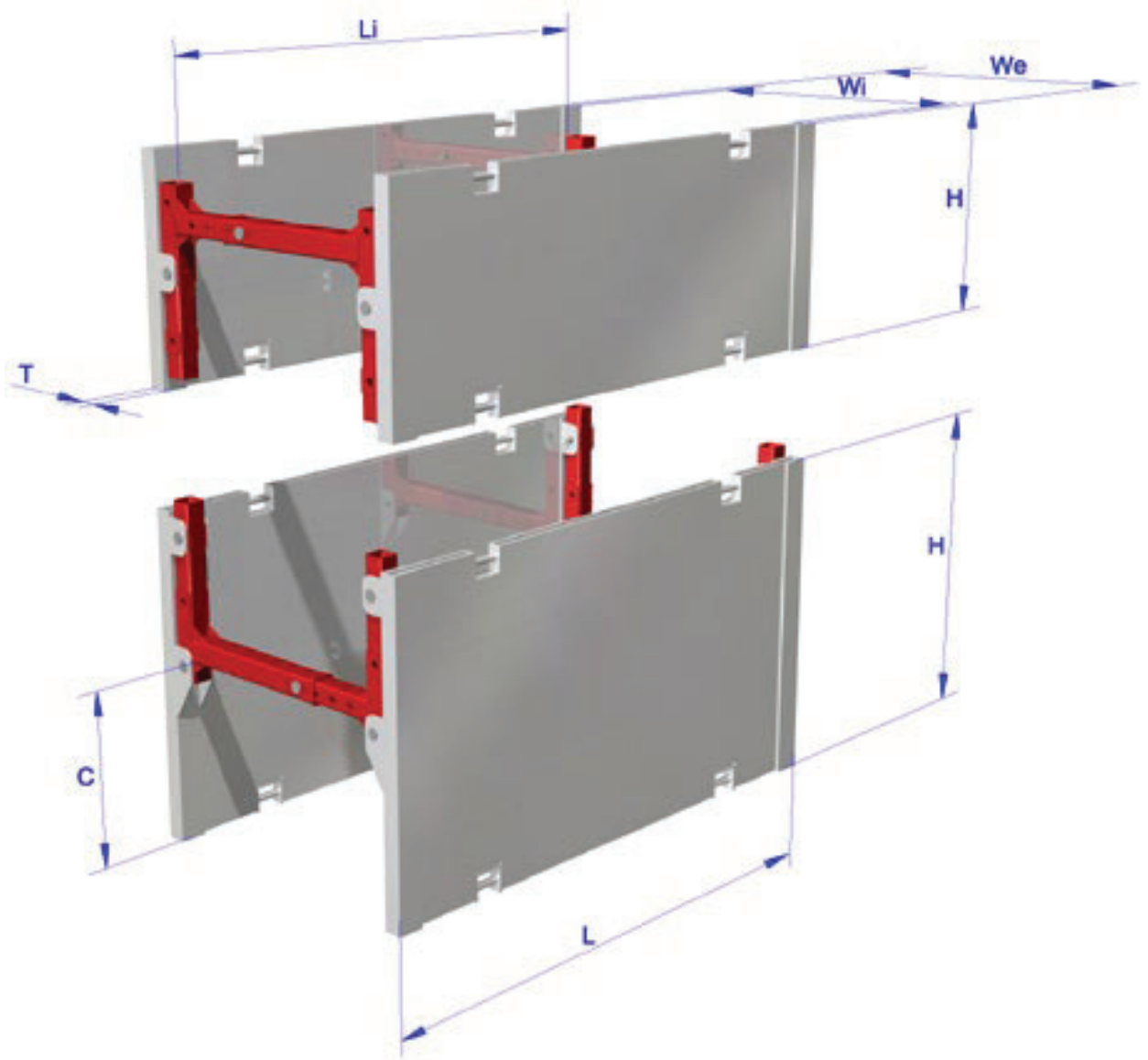
All aluminium trench boxes are lifted and handled by attaching MGF lifting chains to the handling points as shown.



	Product ID					
	4.901	4.9015	4.900	4.9005	4.902	4.9025
Description L x H	2000 x 1450 Base	2000 x 970 Top	2500 x 1450 Base	2500 x 970 Top	3000 x 1450 Base	3000 x 970 Top
Max Depth* (m)	2.42	2.42	2.42	2.42	2.42	2.42
Panel Resistance SWL (kN/m²)	30	30	30	30	25	25
Panel Thick / Weight T(mm)/(kg)	60 / 145	60 / 98	60 / 168	60 / 112	60 / 191	60 / 126
Approx Assembled Weight (kg)	310	216	356	244	402	272
Internal Trench Width Wi(mm)	735-1635	735-1635	735-1635	735-1635	735-1635	735-1635
Trench Width We(mm)	855-1755	855-1755	855-1755	855-1755	855-1755	855-1755
Clearance Below Bottom Struts C(mm)	825	N/A	825	N/A	825	N/A
Clearance Between Struts Li(mm)	1790	1790	2290	2290	2790	2790
Telescopic Strut Type	U	U	U	U	U	U

* Max. depths achievable using a base and 1 top.





ALUMINIUM TRENCH BOX

U-TYPE TELESCOPIC STEEL STRUTS



		Strut Type	Strut Weight
			(kg)
Product ID	4.904	U 590 Inner	10
	4.905	U 890 Inner	12
	4.906	U 545 Outer	10
	4.907	U 845 Outer	12

Range	Inner Type	Outer Type
(mm)		
695 - 995	4.904	4.906
995 - 1595	4.905	4.907

		Strut Inner	Strut Outer
Component	Specification	90x90x5 SHS	100x100x4 SHS
	Material Grade	S355	S355
	Axial SWL	80kN	80kN
	Moment SWL	12kNm	12kNm
	Hole Details	Ø30mm holes	Ø30mm holes
	Unit Mass	13.1kg/m	11.9kg/m

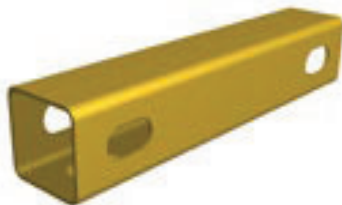
If the above U-Type strut combinations cannot be achieved a minimum overlap of at least 150mm must be provided between the inner and outer.

U-TYPE TELESCOPIC STRUT PINS AND RETAINING CLIPS



		U-Type Strut Pin
Component	Specification	Ø28mm round bar, 160mm long
	Material Grade	080M40 (EN8)
	Shear SWL	80kN
	Weight	1kg

PANEL BASE TO TOP CONNECTOR



The base and top panels are connected via 4 No. short lengths of box that slot within the vertical sections of the trench struts.

		Base to Top Connector
Component	Product ID	4.903
	Specification	80x80x3.6 SHS
	Material Grade	S355
	Hole Details	Ø30mm slotted holes
	Weight	7kg
	Shear SWL	70kN