

BOSS[®]



STAIRMAX⁷⁰⁰

Braced Aluminium Tower
3T - Through The Trapdoor Method

USER GUIDE

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Safety First

Introduction

Please read this user guide carefully. Please note that diagrams are for illustrative purposes only. User guides are also available to download from our website at bossaccesstowers.com.

BoSS mobile aluminium towers are light-weight scaffold towers used throughout the building and construction industry for both indoor and outdoor access solutions where a stable and secure platform is required. Ideal for maintenance and installation work or short-term access, the highly versatile towers provide a strong working platform for a variety of heights.

This user guide provides you with step by step instructions to ensure your system is erected easily and safely, using the 3T (Through The Trapdoor) method.

The law requires that personnel erecting, dismantling or altering towers must be competent. Any person erecting a BoSS mobile tower must have a copy of this user guide. For further information on the use of mobile access and working towers consult the PASMA operators code of practice.

If you need further information, design advice, additional user guides or any other help with this product, please contact the manufacturer on +44 (0)1621 745900 or email uk.customercare@wernerco.com.

Safety First

Safe use

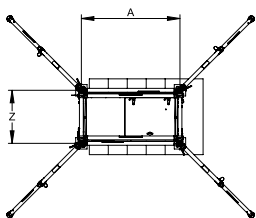
- Check overhead that the area into which the structure is to be erected contains no obstructions, particularly electrical or radio radiation hazards.
- Ensure the ground on which the mobile access tower is to be erected is capable of supporting the tower in use. Refer to Safety Data Schedule.
- **The tower has a single working level with a safe working load of 275kg. All platforms may be used for working, but only one should be used at any one time.**
- Before each use:
 - Check that each prefabricated tower scaffold is complete and correctly assembled.
 - Check that the prefabricated tower scaffold is vertical and make any adjustments as required.
 - Check that no environment changes will affect the safe use of the structure.
- Adjustable legs should only be used for levelling purposes and never to gain extra height.
- Do not use ladders, steps, boxes or similar, to gain additional working height.
- Only climb the tower from the inside using the access method provided.
- Tower scaffolds are not designed to be lifted or suspended.
- Beware of horizontal forces (e.g. power tools) which could generate instability.

Maximum horizontal force per working bay = 30kg

- Tools and materials should be lifted using a reliable lifting material (e.g. a strong rope) employing a reliable knot (e.g. clove hitch) to ensure safe fastening and always lift within the footprint of the prefabricated tower scaffold (i.e. within the area bounded by the stabilisers).
- Safe working loads, normally expressed in kN/m², are expressed below in kg per defined working area.

Safety First

Safe use



Defined working area	Max. safe working load (uniformly distributed including persons)	Load class	Max. no. of persons*
A x Z	275kg	3	1

*Persons are assumed to be 122kg (Reference to HSE - Revision of body size criteria in standards protecting people who work at height - Research report 342)

Access classes

The Access Class provided for climbing this tower is: Access Class 'D' (Vertical Ladder).

Lifting of individual tower components

Raising and lowering components, tools and/or materials by rope should be conducted within the tower base (i.e. within the area bounded by the stabilisers). Ensure that the safe working load of the supporting decks and the tower structure is not exceeded.

Movement of the assembled prefabricated tower scaffold

- The BoSS StairMAX⁷⁰⁰ tower system MUST NOT be moved once erected.
- Always dismantle it and rebuild at the new location.
- The pre-use checklist on the final page should be used to determine tower integrity.

Safety First

Maintenance - Storage - Transport

- All components and their parts should be regularly inspected to identify damage, particularly to joints. Lost or broken parts should be replaced and any tubing with indentation greater than 5mm should be replaced. Adjustable leg threads should be cleaned and lightly lubricated to keep them free running.
- Brace claws, frame interlock clips, trapdoor latches, camlocks and platform wind-locks should be regularly checked to ensure they lock correctly.
- Refer to the BoSS Inspection Manual for detailed inspection and maintenance advice: www.bossaccesstowers.com
- Components should be stored in clean, dry conditions with due care to prevent
- Ensure components are not damaged by excessive strapping forces when transported.

During assembly, use and dismantling

- As part of the risk assessment, wind conditions must be taken into account and reviewed regularly, depending on the duration the structure is onsite.
- The structure has been assessed for wind loads equating to 27mph (43 kph, 12 m/s).
- The effect of onsite wind conditions must be considered prior to the assembly of a tower. The tower must not be used in wind speeds stated above. If greater wind speeds are forecast, the tower must be dismantled while it is still safe to do so.
- Sheets, tarpaulins, cladding or similar, must not be attached to the tower as these will significantly increase any side loads from wind and will potentially make the tower unstable.
- Beware of wind turbulence, funnelling effects around buildings and updraughts on stairways.

The maximum allowable side load on a tower is 30kg.

- **CAUTION:** Excessive side loads due to working from the tower may cause the structure to become unstable. Special consideration should be given to side loads including vibrations.
- Do not abuse equipment. Damaged, incorrect or incompatible components should not be used.

Safety First

CAUTION:

- Always ensure the portal ladder is in closed position when descending the tower. If the portal ladder is in open position, from the protected position of the trapdoor deck (i.e. seated) close the portal ladder ensuring the locking claw has been fully engaged.
- The structure is highly conductive and must not be used when there is a risk of lightning strikes.
- Exercise caution when touching unprotected metal components in extreme high or low temperatures.
- If the tower is damaged in any way while in service, it should not be used again until the damaged components are replaced.

Wind Description	Beaufort Scale	Beaufort No.	Speed in mph	Speed in m/sec
Medium Breeze	Raises dust and loose paper, twigs snap off	4	8-12	4-6
Strong Breeze	Large branches in motion, telegraph wires whistle	6	25-31	11-14
Gale Force	Walking is difficult	8	39-46	17-21

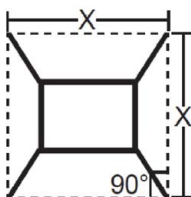
Tower designation & safety data

In accordance with the prefabricated tower scaffold standards, the 'Tower Designation & Safety Data' should be positioned at the base of the prefabricated tower scaffold as shown within the user guide, by means of the 'Tower Designation Information Assembly'. It must be clearly visible so that users are aware of the conditions of safe use. Refer to Safety Data Schedule for content.

Safety First

Stabilisers

- Stabilisers should always be fitted when specified.
- Attach one stabiliser to each corner of the tower as shown. Ensure stabiliser feet are equally spaced to form a square.
- Telescopic stabilisers must always be fully extended.
- Position the lower clamp so that the lower arm is as close to horizontal as possible. Adjust the position of the upper clamp to ensure the stabiliser foot is in contact with the ground. Ensure clamps are secure.

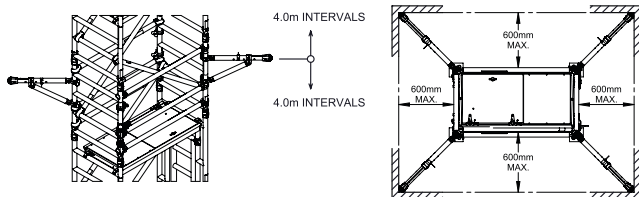


Props

BoSS StairMAX⁷⁰⁰ tower with platform heights above 5.0m should be adequately propped or tied to prevent all movement in the horizontal plane. They must be fitted at a minimum of 4.0m vertical intervals. To improve stability, additional props or ties can also be fitted at lower levels.

Props and ties should conform to the guidance in NASC TG20.

The method shown below illustrates the use of BoSS Confined Space Stabilisers.



Attach one confined space stabiliser to each corner of the tower as shown (see page 16). Ensure stabiliser feet are touching the walls - adjust confined space stabilisers as necessary to achieve this.

If you require further advice, please contact the manufacturer.

Safety First

Assembly Procedure

This tower structure must be assembled, and components oriented, in accordance with this instruction manual. Deviation from this instruction manual is not permitted.

A minimum of two persons are recommended for assembly and disassembly of this prefabricated tower structure. The maximum number of persons permitted on the tower during assembly is stated in the safety data schedule.

Platforms must be installed with vertical distances between them not exceeding 2m when assembling and dismantling.

The maximum number of people on a working platform level permitted to simultaneously exert a horizontal load of 30kg is:

- **1 person per bay for bays less than 4m long**
- **2 persons per bay for bays greater than 4m in length**

Check that all components, tools and safety equipment are on site (refer to quantity schedule), undamaged and that they are functioning correctly, particularly the brace claw locking mechanism.

Full inspection guidance can be found at www.bossaccesstowers.com.

Damaged or incorrect components should not be used.

Component weights can be found in the quantity schedule and on the corresponding BoSS Product Datasheets.

Check that the ground on which the tower structure is to be erected and moved is capable of supporting the tower in use and within the levelling limits of the tower system.

Check overhead that the area into which the tower structure is to be built contains no obstructions, particularly electrical or radio radiation hazards.

Never stand on an unguarded platform positioned above the first rung of a tower structure. If your risk assessment shows it necessary, you may also need to guardrail platforms at this level.

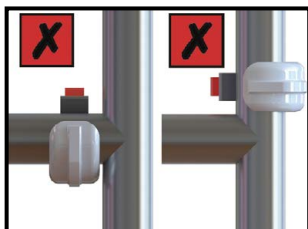
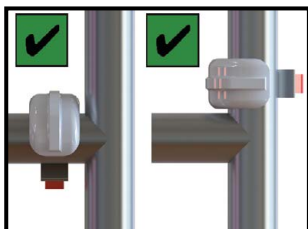
Tower components should be lifted using a reliable lifting material (e.g. a strong rope) employing a reliable knot (e.g. clove hitch) to ensure safe fastening and always lift within the footprint of the tower structure.

'Tower Designation & Safety Data' content for the 'Tower Designation Information Assembly' can be found in the 'Safety Data Schedule'. This assembly must be positioned at the base of the prefabricated tower scaffold and clearly visible for users. Refer to Safety Data Schedule for content.

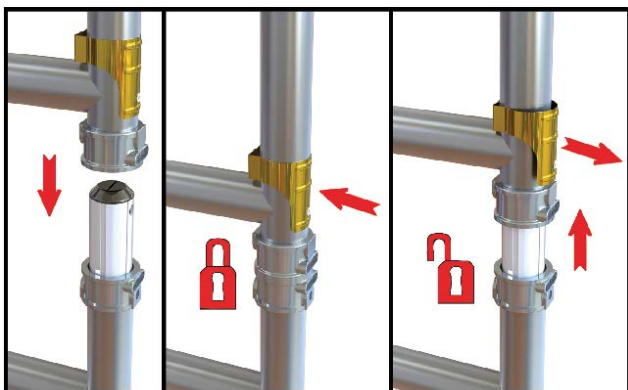
Adjustable legs should only be used for levelling purposes and never to gain extra height.

Safety First

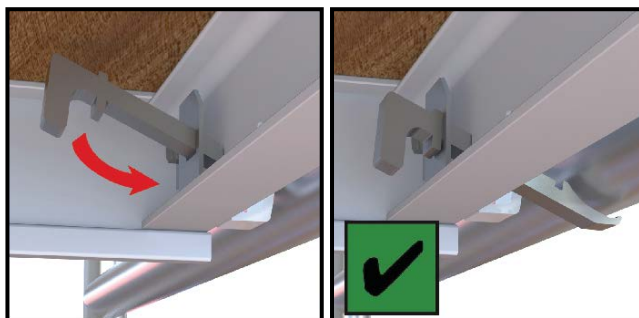
Assembly Procedure



Ensure horizontal braces and guardrails are fitted correctly.

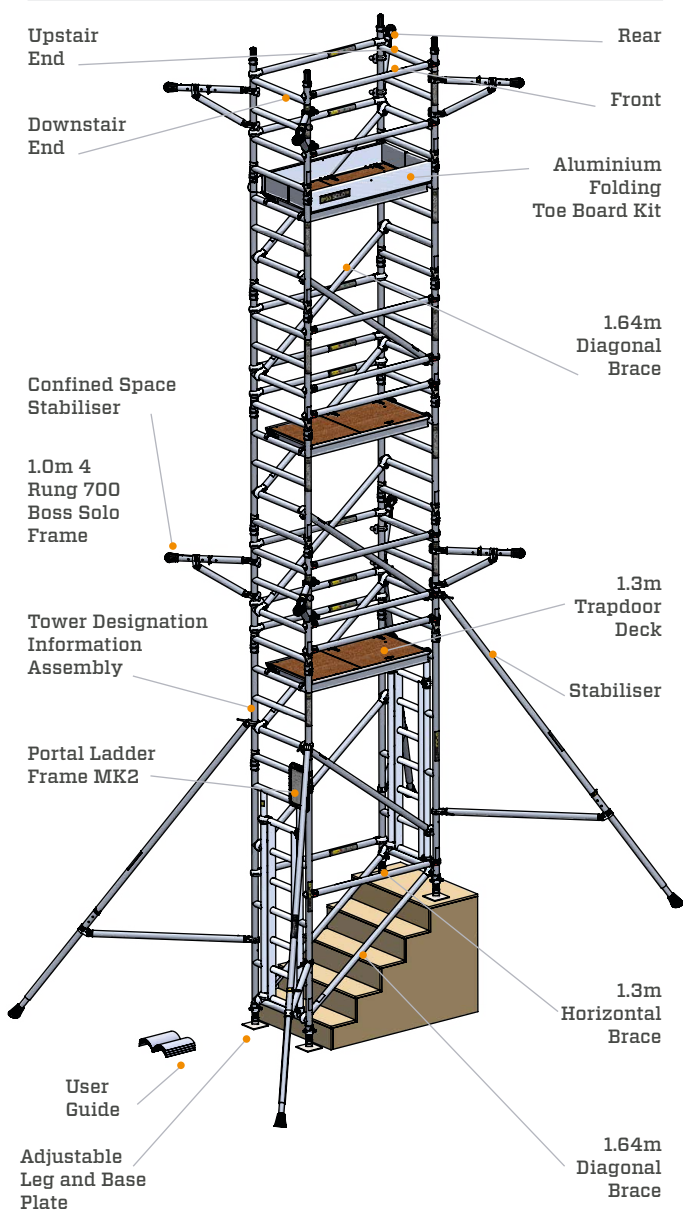


Ensure interlock clips on frame members are in the 'locked' position.



Ensure wind-locks are engaged before moving onto the deck levels.

Component Diagram



Component quantity & safety data schedule

BoSS StairMAX⁷⁰⁰ Mk 2 - 1.3 x 0.7m (Braces Guardrail)

Component code	Component description	Composite code		Internal or external use			Internal use only			
		Working height (m) >	Platform height (m) >	61420300	61420500	61420700	61420900	61421100		
				5.0	7.0	9.0	11.0	13.0		
33041300	Base Plate	1.7 kg		4	4	4	4	4	4	4
33551300	Adjustable Leg	1.1 kg		4	4	4	4	4	4	4
67011000	1.0m 4 Rung 700 BoSS SOLO Frame	3.9 kg		3	7	11	15	19		
33052600	Portal Ladder Frame Mk 2	12.8 kg		2	2	2	2	2	2	2
35651300	1.3m Horizontal Brace	1.6 kg		6	12	18	24	30		
35751300	1.64m Diagonal Brace	1.9kg		5	8	11	14	17		
67070100	1.3m Trapdoor Deck	9.8 kg		1	2	3	4	5		
67040100	SP4 Stabiliser	4.4 kg		4	-	-	-	-		
31851300	SP10 Stabiliser	8.8 kg		-	4	4	4	4		
31651400	Confined Space Stabiliser	2.9 kg		-	-	8	8	12		
67050100	Folding Toe Board Kit	4.4 kg		1	1	1	1	1		
30001900	Designation Information Kit	-		1	1	1	1	1		
110137-01	User Guide	-		1	1	1	1	1		
Total Self-Weight of Tower (kg)				99	158	222	262	315		
Max. Exerted Leg Load (kg)				150	160	180	190	214		
Max. Exerted Prop Load (kg)				-	-	16	16	16		

NOTE:

The safety data specified within the schedule above which relates to the specific tower to be assembled must be transferred into the pre-defined boxes on the Tower Designation Information insert found in the Tower Designation Information Kit.

(Working and Platform heights are measured from underside of lowest base plate.)

Build Method

When building a BoSS Tower

To comply with 'Work at Height Regulations' we show assembly procedures with platforms every two metres in height and the locating of guardrails in advance of climbing onto a platform to increase safety and reduce the risk of a fall. Never stand on an unguarded platform positioned above the first rung of a tower. If your risk assessment shows it necessary, you may also need to guardrail platforms at this level.

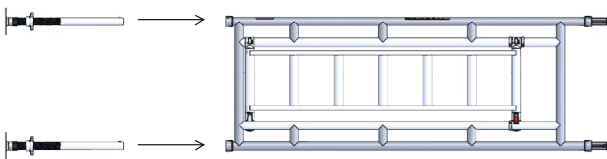
The procedure illustrated shows a 7.0m working height tower build.

The manufacturer recommend two persons are used to build BoSS Towers. Above 4.0m platform height, it is essential that at least two persons are used. Only climb the tower from the inside.

The manufacturer recommend the 'Tower Designation & Safety Data' is recorded within the 'Tower Designation Information Assembly' before proceeding with the tower assembly. Refer to Safety Data Schedule for content.

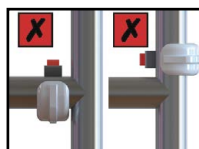
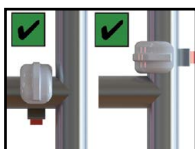
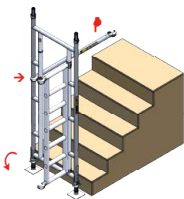
1 Insert two base plates into adjustable legs and fit the leg and base plate assemblies into one of the two portal ladder frames. Repeat with the remaining legs and base plates. It is recommended, for ease of levelling, that a maximum gap of 50mm is left between the bottom of the leg and the adjustable nut.

Note: Adjustable legs are for levelling only. They are not to be used to gain extra height at the working level.



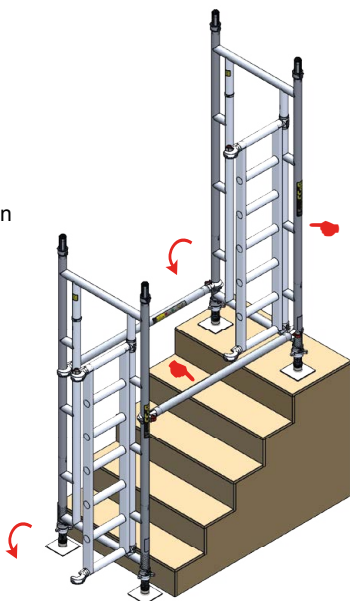
2 Fit one horizontal brace (red catch) onto the vertical of end frame on the climbing side in position indicated with an arrow, with the open section of the claw facing outwards. Ensure the gate opens as shown.

Note: All locking claws must be opened before fitting and positively locked into position.



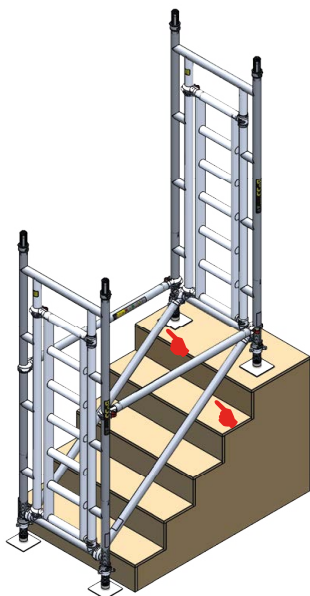
Build Method

3 Position a second portal ladder frame higher on stairs as shown and fit other end of horizontal brace just above the bottom rung. Fit another horizontal brace as shown. This will become the higher 'upstairs' end of the tower. Ensure both gates open the same direction as shown.



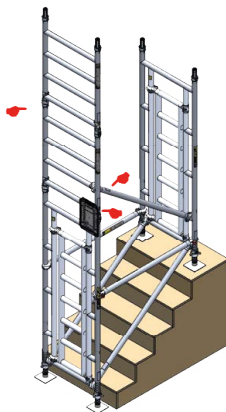
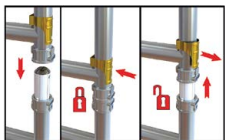
4 Fit two diagonal braces (blue catch) between bottom rungs of both portal ladder frames, one on each side of the tower. Open sections of claws must face downwards. The structure must be vertical to within 1cm per metre.

Ensure the frames are vertical and level by checking with a spirit level and setting the adjustable legs as required.



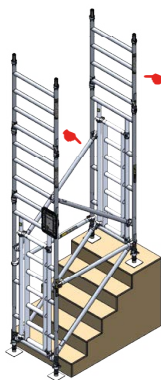
Build Method

5 Connect two 4 rung frames together and fit onto portal ladder frame as shown. Engage interlock clips. Fit one diagonal brace in position shown. Record 'Tower Designation & Safety Data' within the 'Tower Designation Information Assembly' and attach to the tower in position shown. Refer to safety data schedule for content.



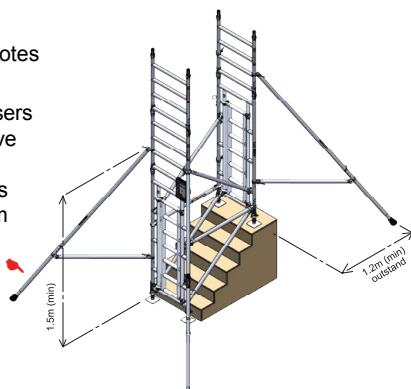
Ensure interlock clips on frame members are in the 'locked' position

6 Fit one 4 rung frame onto the portal ladder frame at the higher level by standing on the stairs. Engage interlock clips. Fit one more diagonal brace as shown.



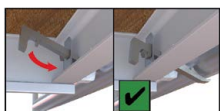
7 Fit stabilisers - see notes on page 7.

The upper clamp of stabilisers must be at least 1.5m above the bottom of the frame. Where possible, stabilisers must also have a minimum outstand of 1.2m.

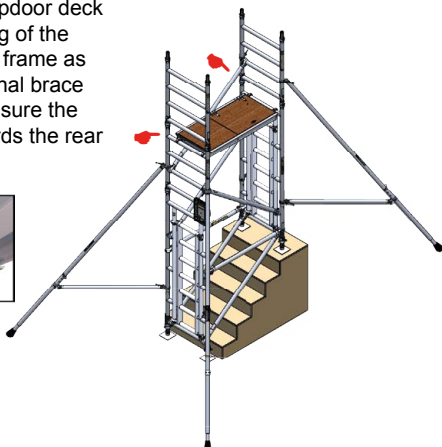


Build Method

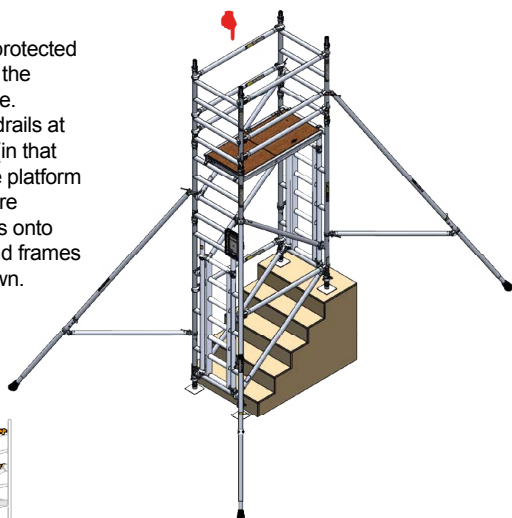
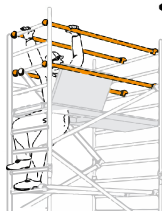
- 8** Fit one 1.3m trapdoor deck onto the top rung of the 'upstairs' portal ladder frame as shown. Fit one diagonal brace in position shown. Ensure the trapdoor opens towards the rear of the tower.



Ensure all wind-locks are engaged.



- 9** From the protected position of the trapdoor deck (i.e. seated), fit guardrails at 0.5m and 1.0m (in that order) above the platform level. Fit two more horizontal braces onto the vertical of end frames in positions shown.



Do not climb onto the deck until all guardrails are in place. Ensure the gate is fully engaged before climbing.

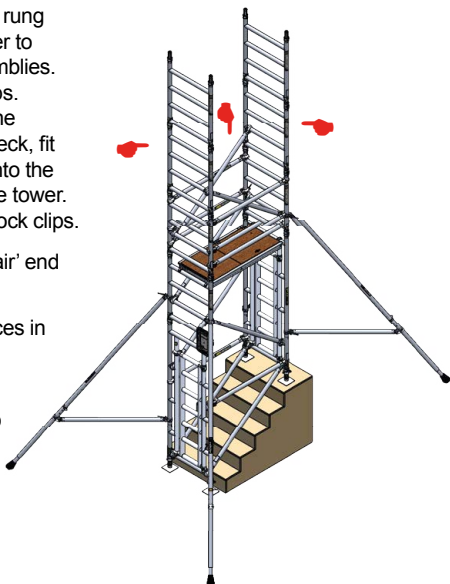
Build Method

10 Connect two 4 rung frames together to create two subassemblies. Engage interlock clips. Whilst standing on the protected platform deck, fit one subassembly onto the 'downstair' end of the tower. Again, engage interlock clips.

Repeat for the 'upstair' end of the tower.

Fit two diagonal braces in positions shown.

Ensure all claws are positively locked into position.

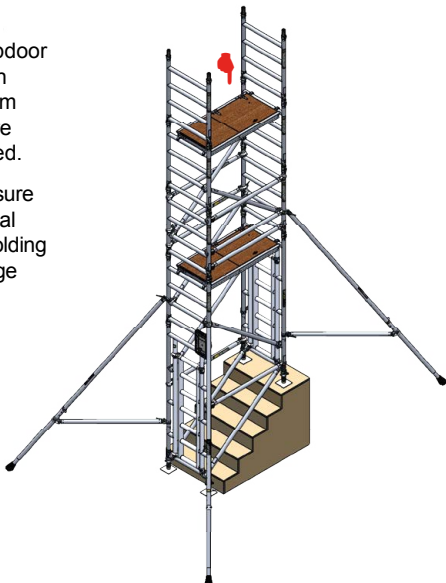


11 Fit one 1.3m trapdoor deck onto the 8th rung above the platform deck as shown. Ensure wind-locks are engaged.

Position platform to ensure space for future diagonal brace and aluminium folding toe board set (see image below).



Top platform position



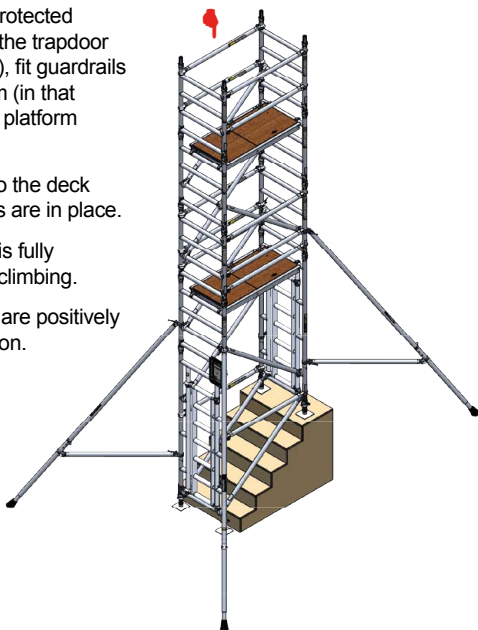
Build Method

12 From the protected position of the trapdoor deck (i.e. seated), fit guardrails at 0.5m and 1.0m (in that order) above the platform level.

Do not climb onto the deck until all guardrails are in place.

Ensure the gate is fully engaged before climbing.

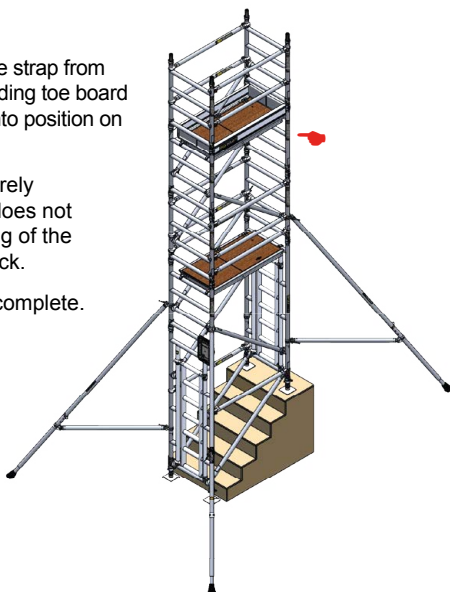
Ensure all claws are positively locked into position.



13 Unclip storage strap from aluminium folding toe board set, unfold and fit into position on working platform.

Ensure it sits squarely around deck and does not impede the opening of the trap door in the deck.

The tower is now complete.



Build Method

When building beyond 5.0m platform height:

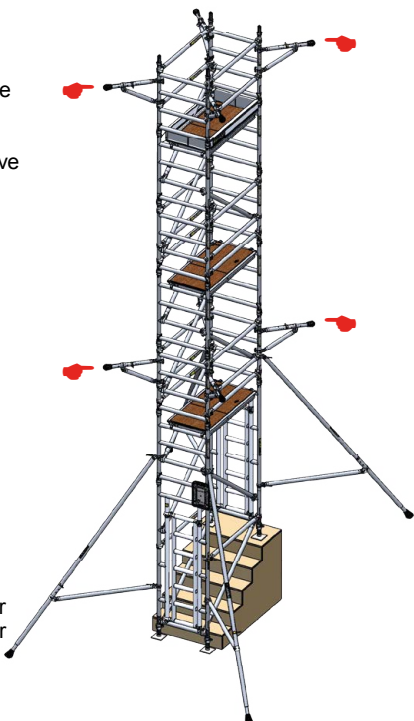
Continue to add two pairs of assembled 4 rung frames, six braces and one trapdoor deck as shown in previous steps. Add four confined space stabilisers as shown. At every platform level add guardrails above 2nd and 4th rungs above the platform. Fit additional guardrails above 1st rungs, except working platform level.

Fit these braces from the protected trapdoor position. Do not climb onto the platform until all guardrails are in place.

Continue until the required height is reached.

At platform heights above 5.0m, confined space stabilisers must be fitted at 4.0m intervals as instructed below and on page 5.

Fit a confined space stabiliser to all four corners of the tower as shown ensuring that the stabiliser arm is horizontal.



Ensure the end of the stabiliser arm contacts the walls. If it does not, adjust by unclipping and extracting the locking pin, sliding the arm until correct length and hole alignment is achieved. Reinsert the locking pin, ensuring clip is engaged. See images below.



Unclip & extract pin



Extend/retract adjustable arm



Reinsert pin and engage clip

To dismantle a BoSS tower:

Simply follow the assembly steps in reverse, ensuring that the 3T method is followed.

Pre-use Safety Inspection Checklist

Description	Yes
Tower structure upright and level	
Base plates and legs correctly adjusted	
Horizontal and diagonal braces fitted	
Stabilisers and props fitted as specified	
Platforms located and wind-locks engaged	
Interlock clips engaged	
Toe boards located	
Guardrails fitted correctly and positively locked	
Tower designation information kit fitted	

Notes

Notes

For further information about this
product or any other products and
services, please contact:

The Causeway, Maldon,
Essex, CM9 4LJ,
United Kingdom

☎ +44 (0)1621 745900

🖨 +44 (0)1621 859845

✉ uk.customercare@wernerco.com

🌐 bossaccesstowers.com

Member of:



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