

BoSS[®] StairMAX⁷⁰⁰

EN1004:2004 - 3 - 5/12 - XXXD

Aluminium tower
700 Climbing Rung

3T - Through the Trap Door

EN1004 +

TOWER APPROVED FOR	
INTERNAL USE	EXTERNAL USE
✓	✓

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Introduction

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

The law requires that personnel erecting, dismantling, altering or inspecting towers must be competent. Any person erecting the product described in this user guide must have a copy of this guide. For further information on the use of mobile access and working tower consult the PASMA operator's code of practice or visit our website at www.youngmangroup.com

If you need further information, design advice, additional guides or any other help with this product, please contact Youngman on +44 (0)1621 745900 or email sales@youngmangroup.com

Safe Use

- Check that all components are on site, undamaged and that they are functioning correctly (refer to Checklist & Quantity Schedules). Damaged or incorrect components must never be used.
- Ensure the ground on which the mobile access tower is to be erected is capable of supporting the tower.
- 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.
- Adjustable legs should only be used for levelling.
- Do not use ladders, steps, boxes or similar, to gain additional working height.
- Mobile Access Towers are not designed to be lifted or suspended.
- Youngman Group strongly advises against the mixing of tower components because of the potential safety risks for users and their inability to rely upon the manufacturers Product Liability Insurance in the event of an accident occurring as a result of mixing components from different manufacturers. For more information visit www.youngmangroup.com/about/mix-match-components
- It is recommended that towers should be tied to a solid structure when left unattended.

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.

Moving the Tower

- The StairMAX tower system MUST NOT be moved once erected.
- Always dismantle it and rebuild at the new location.

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 not be used and put to one side for repair by the manufacturer. Adjustable leg threads should be cleaned and lightly lubricated to keep them free running.
- Brace claws, frame interlock clips, trap door latches, claw mechanisms and platform windlocks should be regularly checked to ensure they lock correctly.
- Refer to the BoSS Inspection Manual for detailed inspection and maintenance advice: www.youngmangroup.com/products/access-towers
- Components should be stored in clean, dry conditions with due care to prevent damage.
- Ensure components are not damaged by excessive strapping forces when transported.

SAFETY FIRST - TOWER BUILD

Preparation and Inspection

- Inspect the equipment before use to ensure that it is not damaged and that it functions properly. Damaged, incorrect or incompatible components must not be used.

During Assembly, Use and Dismantling

- Complete towers, in accordance with EN1004, should be stable in a free standing condition in a wind speed that equates to 28mph or Beaufort force 6. If the wind speed should exceed 17mph you should cease work upon the tower. If the wind speed is expected to reach 25mph the tower should be tied into a rigid structure. If it is expected to reach 40mph the tower should be dismantled.
- The effect of on-site wind conditions must be considered prior to the assembly of a tower.
- 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.
- Wind conditions from funnelling effects such as open ended buildings, hangars or unclad buildings, must also be considered prior to use as these wind effects can be much greater.
- Excessive side loads from working on the tower, i.e. through drilling or pulling, may also make a tower unstable. **The maximum allowable side load on a tower is 20kg.**
- Do not abuse equipment. Damaged, incorrect or incompatible components should not be used.

Wind Description	Beaufort Scale	Beaufort No.	Speed in m.p.h	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

Wind Speed Table

Ties

- You should tie in towers of all heights wherever possible, as it is safe practice to do so. However, where towers are left unattended or are to be located in particularly exposed conditions, wind forces will almost certainly affect stability. In these circumstances ensure that the tower is adequately tied in or restrained from blowing over and that platforms are securely fixed, or alternatively the tower dismantled.
- For further information on tying-in a tower consult the PASMA Technical/Safety Guidance Note: *"Tying Mobile Access Towers"* www.youngmangroup.com/products/access-towers

Safety Checklist

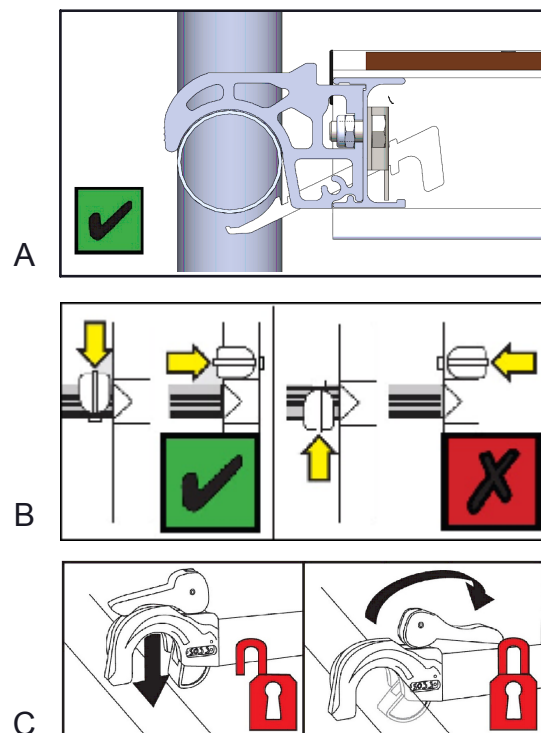
Mobile Towers - 3T Method

PRE-ASSEMBLY CHECKLIST

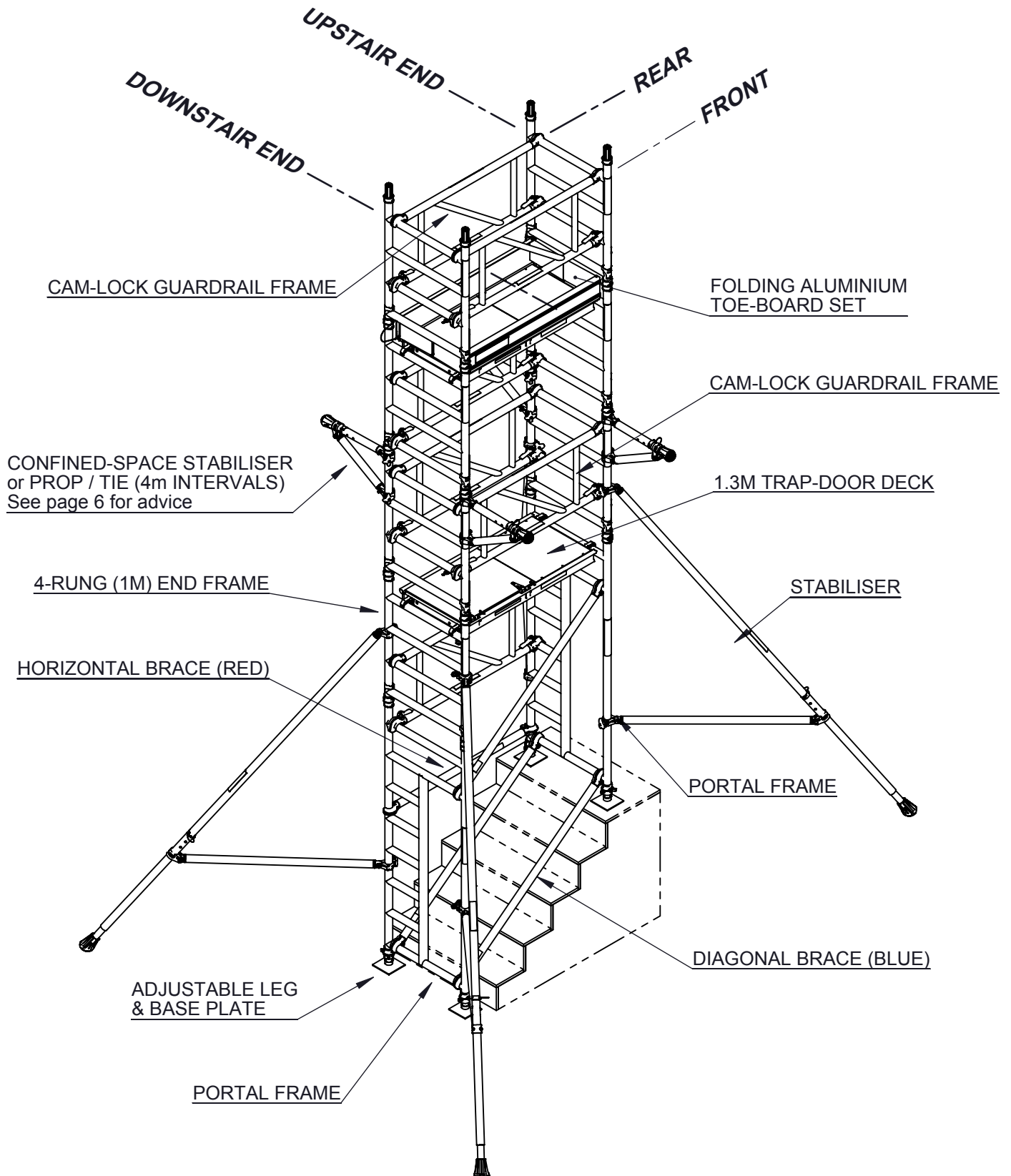
- Ensure all components are present (see quantity schedule on page 5).
- Inspect components prior to assembly.
- Ensure all brace claws, cam-locks and adjustable legs operate correctly.
- Ensure base plates swivel freely and are undamaged.
- Full inspection guidance can be found here at www.youngmangroup.com/products/access-towers

PRE-USE CHECKLIST

- Inspect tower prior to use.
- Tower is vertical and level, using a spirit level, and adjust legs if necessary.
- Props, ties or confined-space stabilisers must be fitted on towers of 4m platform height and greater. They must be positioned at 4m regular intervals thereafter.
- Base plates are located fully on stair tread.
- Correct stabilisers are fitted correctly.
- Platforms are fitted correctly and windlocks engaged. See image A.
- Toe boards are fitted correctly.
- Guardrails are fitted correctly, see image B.
- Camlocks are engaged and locked. See image C.
- Reinspect the tower every 7 days or less.



COMPONENT DIAGRAM



QUANTITY SCHEDULE

BoSS StairMAX 700 - 1.3 x 0.7m

3T Method			Internal & External		Internal ONLY		
Code	Component & weight (Kg)	Working Height (m) >	5.0	7.0	9.0	11.0	13.0
		Platform Height (m) >	3.0	5.0	7.0	9.0	11.0
330413	Base plate	1.7 Kg	4	4	4	4	4
335513	Adjustable leg	1.1 Kg	4	4	4	4	4
330516	Portal frame (2.0m high x 0.70m wide)	6.2 Kg	2	2	2	2	2
670110	4 rung span frame (1.0m high x 0.70m wide)	3.9 Kg	3	7	11	15	19
323511	1.3m trap door deck	7.8 Kg	1	2	3	4	5
356513	1.3m horizontal brace (Red)	1.6 Kg	1	1	1	1	1
357513	1.64m diagonal brace (Blue)	1.9 Kg	3	3	3	3	3
670301	1.3m Cam-Lock Guardrail Frame	5.0 Kg	3	6	9	12	15
670501	Aluminium folding toe-board	4.4 Kg	1	1	1	1	1
670401	SP4 Stabiliser	3.7 Kg	4	0	0	0	0
318513	SP10 Stabiliser	9.0 Kg	0	4	4	4	4
316514	Confined space stabiliser	2.3 Kg	0	0	4	4	4
TOTAL SELF-WEIGHT OF TOWER (Kg)			85	144	192	230	269

[Working and Platform heights are measured from underside of lowest base plate.]

Build Aid:

For every 2m lift required, add an additional four 4 rung frames, one trap door deck and three Cam-Lock guardrail frames. Use of confined-space stabilisers or props must be used at every 4m interval (see page 6 for advice).

Stabilisers and Props/Ties

For towers assembled **INTERNALLY**, if space restrictions are so severe that stabilisers cannot be fitted, they may be omitted. However, the tower **MUST** be fitted with props or ties - without exception. See page 6 for full details.

For **EXTERNAL** towers, stabilisers shall be fitted at all times.

Working Platforms and Platform Loading

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.

The maximum safe working load (the combined weight of the users, tools and materials) that may be placed on a platform is 275kg. This must be evenly distributed over the whole platform level.

The quantity schedules shown in this user guide will enable the tower to be built safely and therefore comply with the requirements of the 'Work at Height Regulations'. Folding toe boards will need to be added if any levels are used as working platform or for storage of materials.

Platform Heights Above 5m (INTERNAL USE ONLY)

When used internally, platform heights up to 11m can be achieved with the use of props/ties. Please refer to page 6 for guidance.

QUANTITY SCHEDULE

Stabilisers

Stabilisers shall always be fitted when specified.

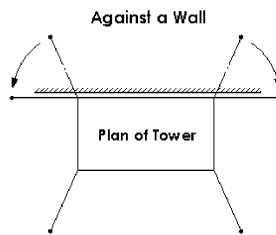
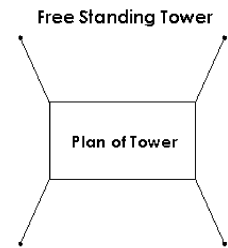
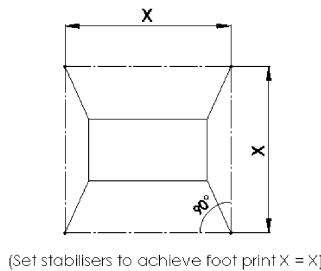
To improve stability, larger stabilisers can be used at lower level than shown in the quantity schedules.

Attach one stabiliser to each corner of the tower as shown. Ensure stabilisers feet are equally spaced to form a square.

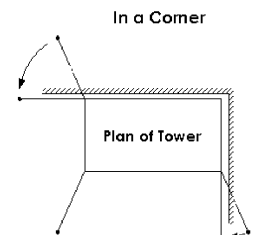
SP4 and SP10 telescopic stabilisers must always be fully extended.

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.

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



(Swing stabilisers parallel to wall)

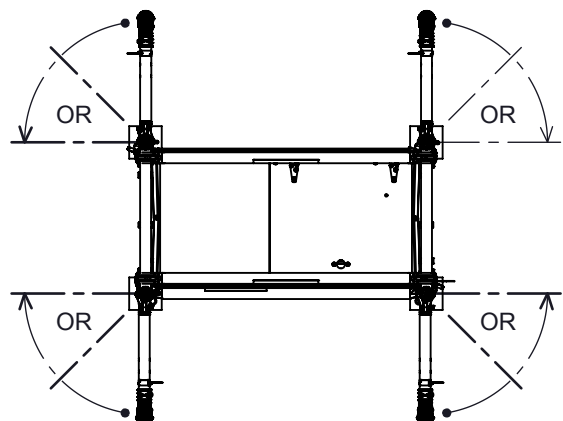
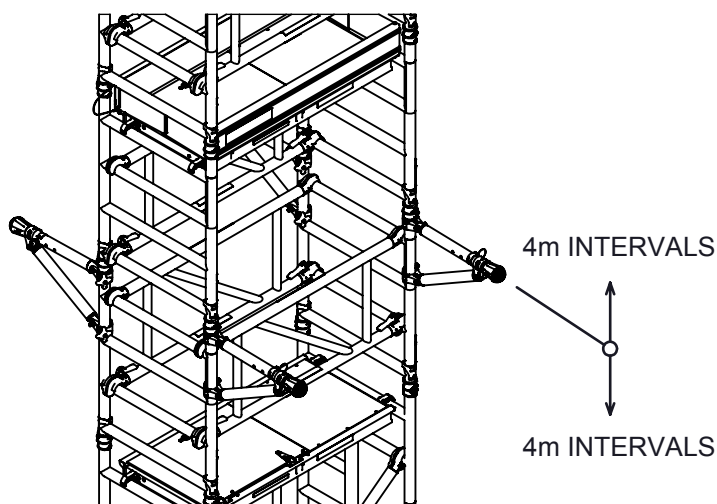


(Swing stabilisers parallel to walls)

Props and Ties

The BoSS StairMAX 700 tower shall be adequately propped or tied to prevent lateral movement. They must be fitted at regular 4m intervals. To improve stability, additional props or ties can also be fitted at lower levels.

The method shown below illustrates the use of BoSS Confined-Space Stabilisers, for speed and compatability. Other methods are available. For further information on tying-in a tower, consult the PASMA Technical/Safety Guidance Note: "Tying Mobile Access Towers" at www.youngmangroup.com/products/access-towers.



Attach one confined-space stabiliser to each corner of the tower as shown (see also page 15). Ensure stabiliser feet are touching the lift shaft walls - adjust confined space stabilisers as necessary to achieve.

If you require further advice, please contact Youngman on +44 (0) 1621 745900.

BUILD METHOD

When building a BoSS tower:

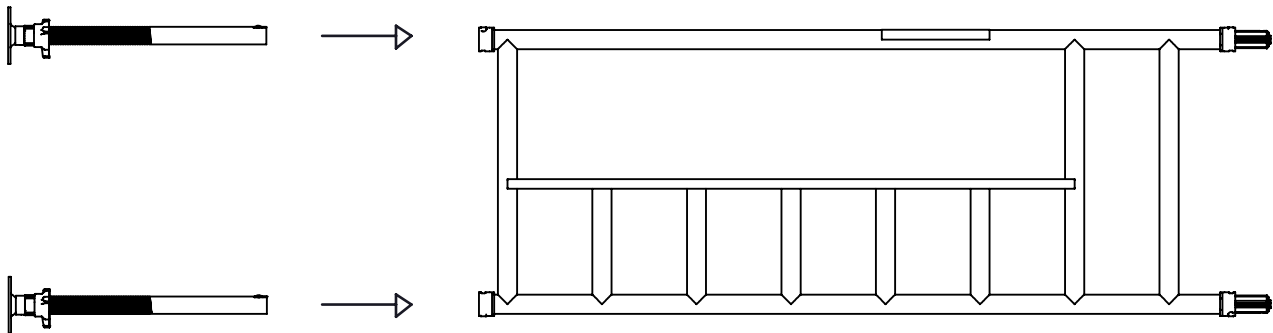
- To comply with 'Work at Height Regulations' we show assembly procedures with platforms every 2 meters in height and the locating of guardrails in advance of climbing onto a platform to increase safety and reduce the risk of a fall.
- Never stand on an unguarded platform positioned above the first rung 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 7m working height tower.

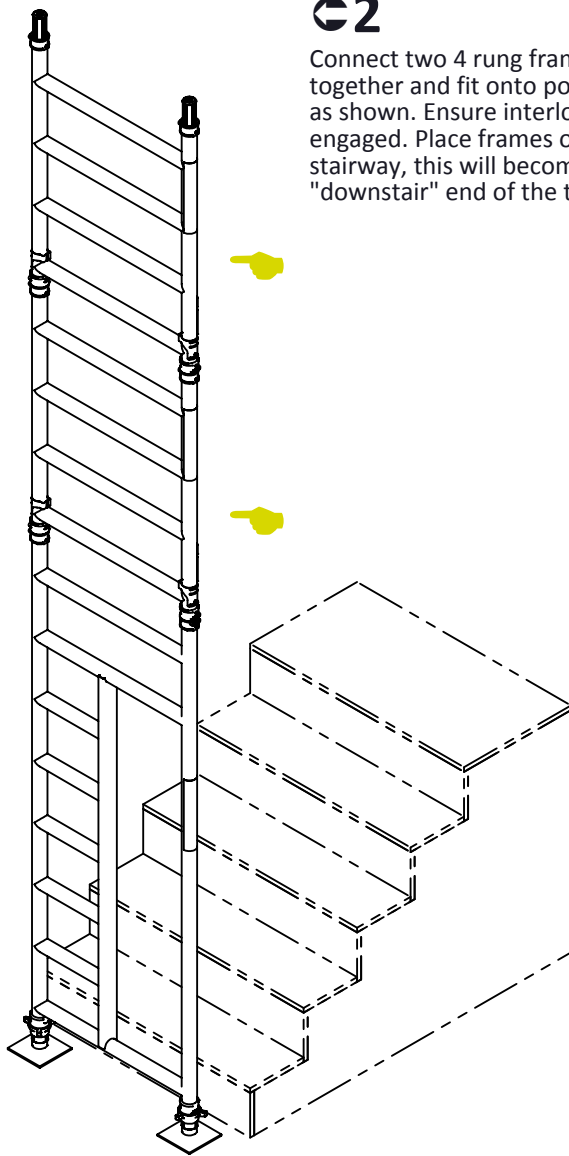
Youngman recommend two persons are used to build BoSS Towers. Above 4m height, it is essential that at least two persons are used. Only climb the tower from the inside.

1

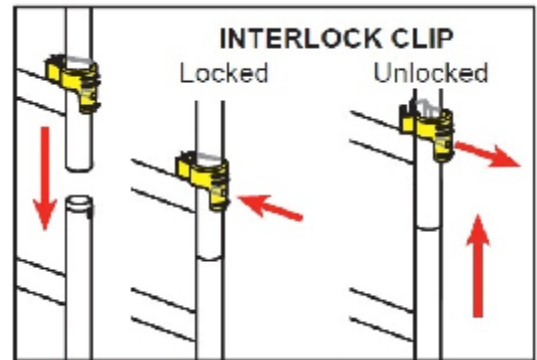
Insert two base-plates into adjustable legs and fit the leg and base-plate assemblies into one of the two 2m portal frames. Repeat with the remaining legs and base-plates. Adjustable legs should only be used for levelling.



BUILD METHOD

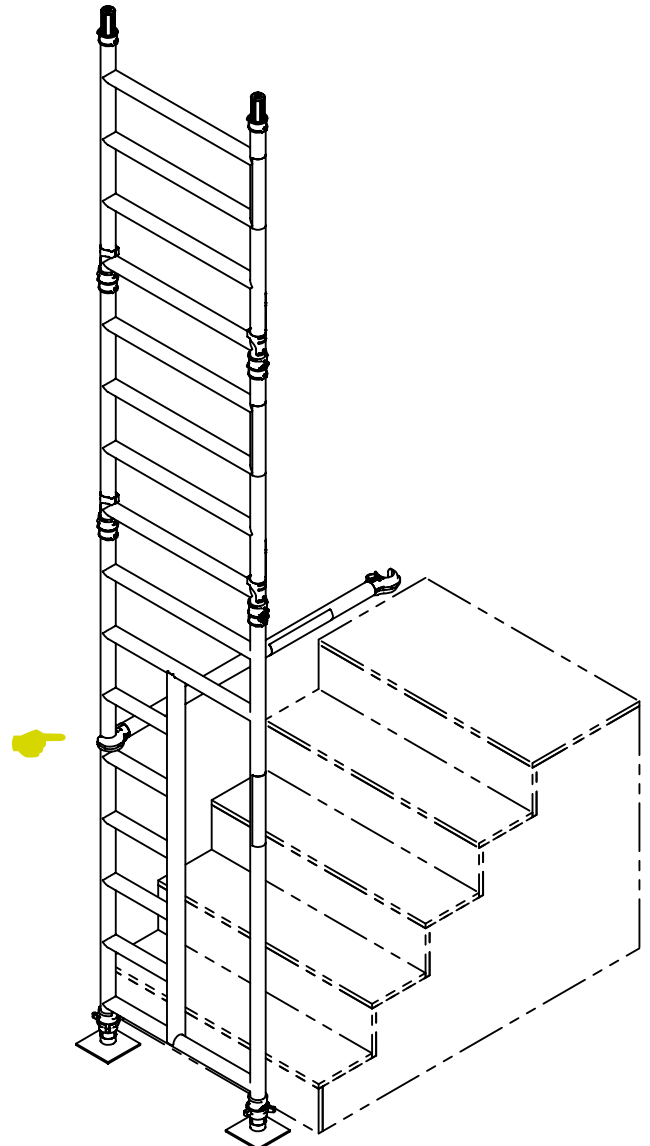
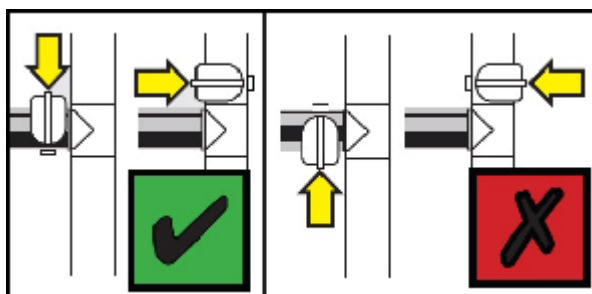
**2**

Connect two 4 rung frames together and fit onto portal frame as shown. Ensure interlock clips are engaged. Place frames onto stairway, this will become the lower "downstair" end of the tower.

**3**

Fit horizontal brace (red) onto vertical of end frame on the climbing side above 5th rung, with the claw facing outwards.

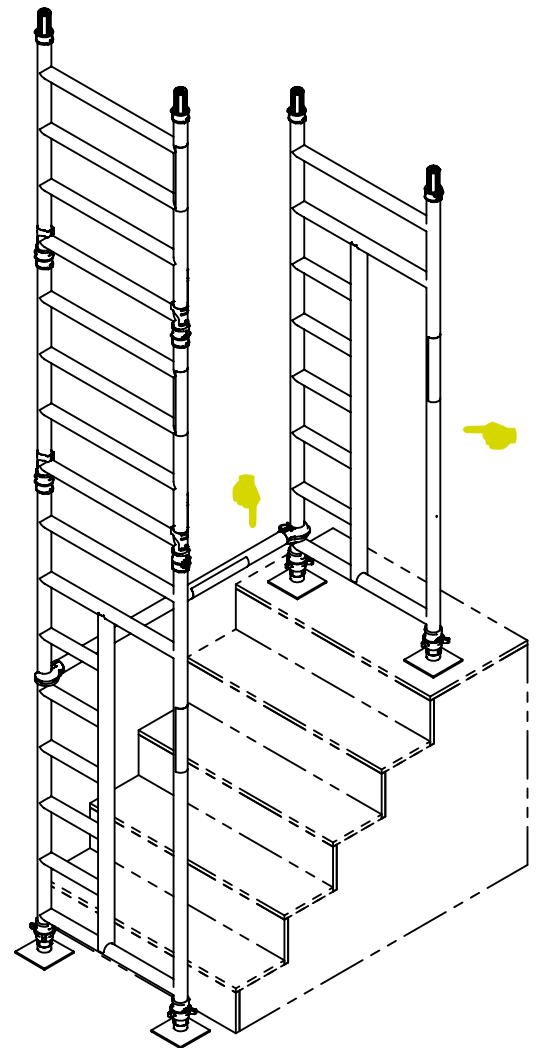
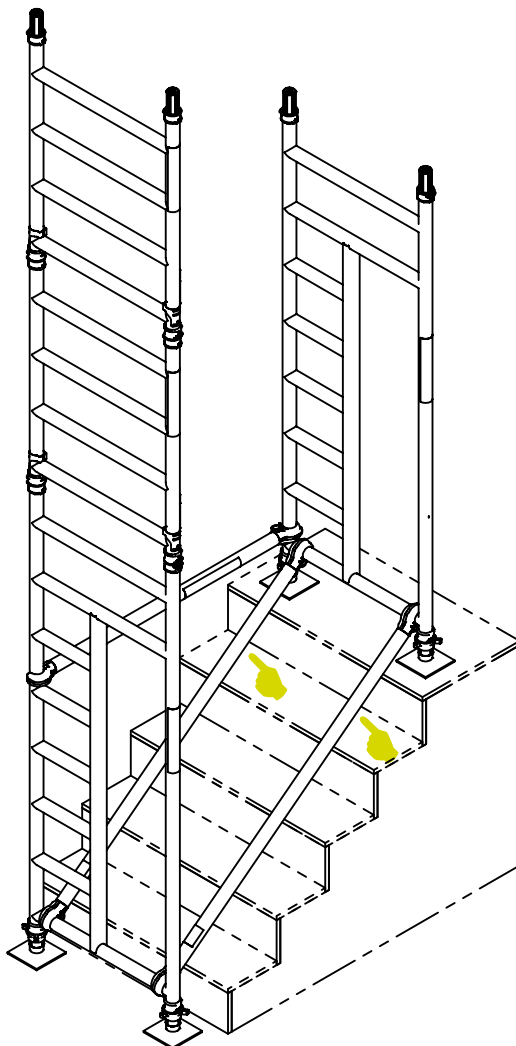
Note: All locking claws must be opened before fitting.



BUILD METHOD

4 ⇨

Position a second portal frame higher on stairs as shown, with opening on same side and fit other end of horizontal brace just above the bottom rung. This will become the higher "upstair" end of the tower.



5

Fit pair of diagonal braces (blue) between bottom rungs of both portal frames, one on each side of the tower. Claws must face downwards.

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

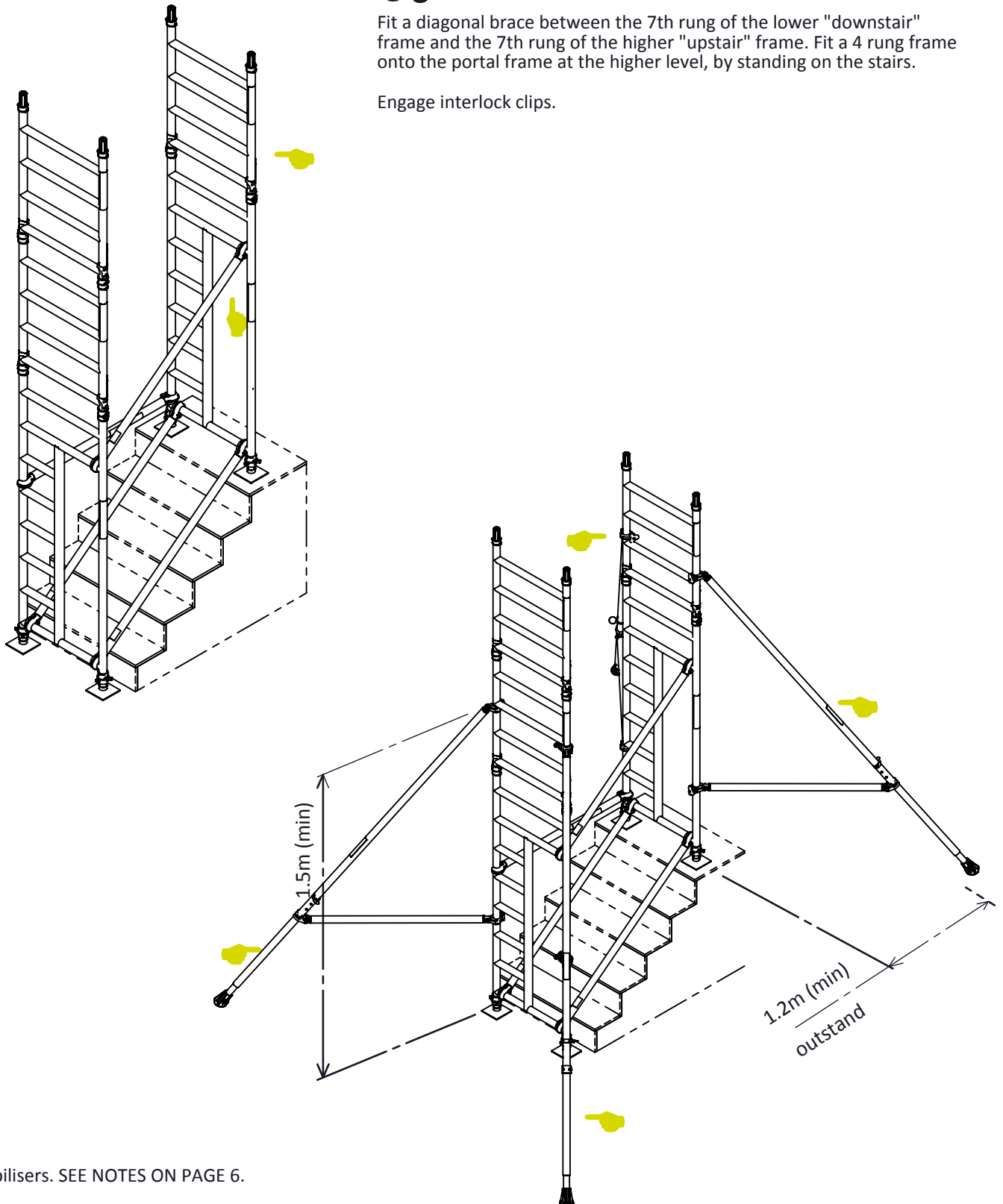
IMPORTANT - Only use the adjustable legs to level the tower and not to gain extra height.

BUILD METHOD

6

Fit a diagonal brace between the 7th rung of the lower "downstair" frame and the 7th rung of the higher "upstair" frame. Fit a 4 rung frame onto the portal frame at the higher level, by standing on the stairs.

Engage interlock clips.



7

Fit the stabilisers. SEE NOTES ON PAGE 6.

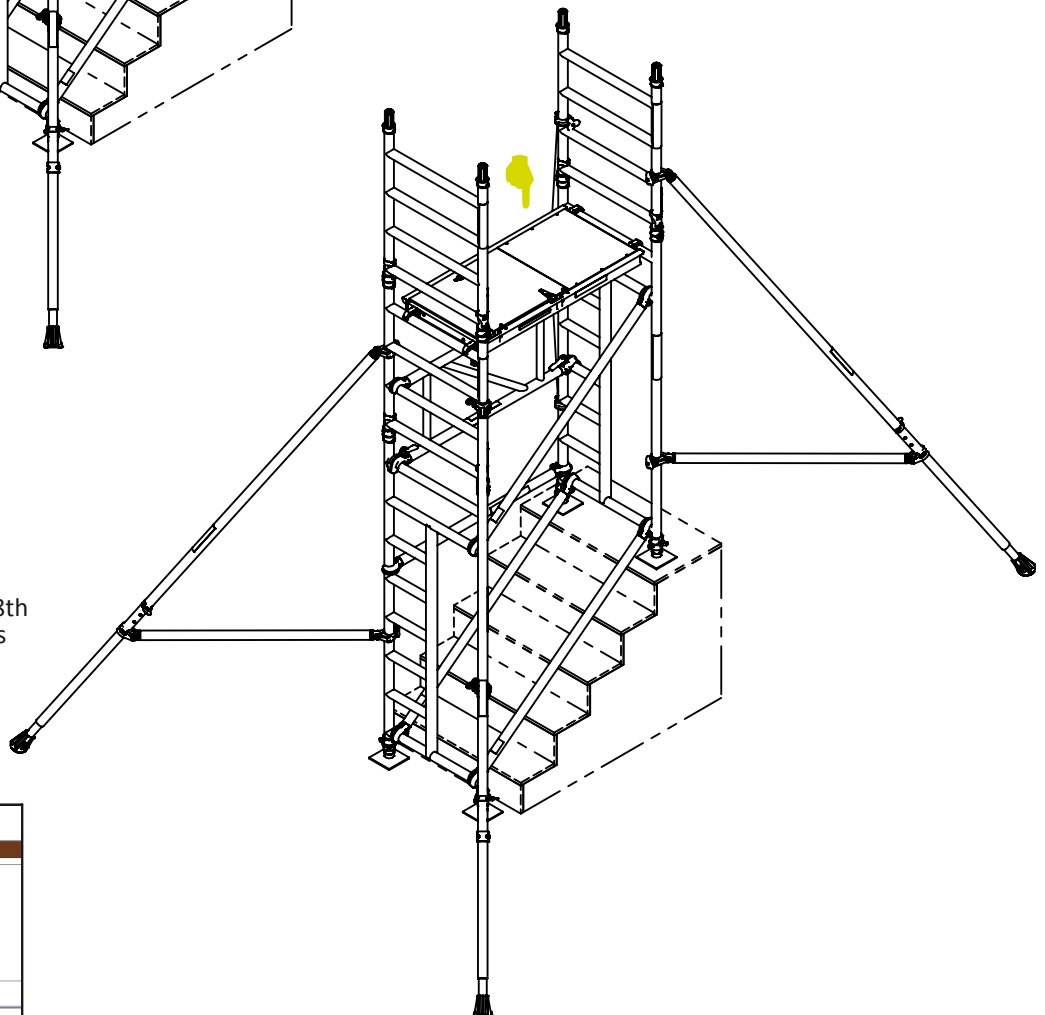
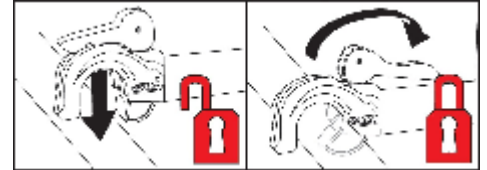
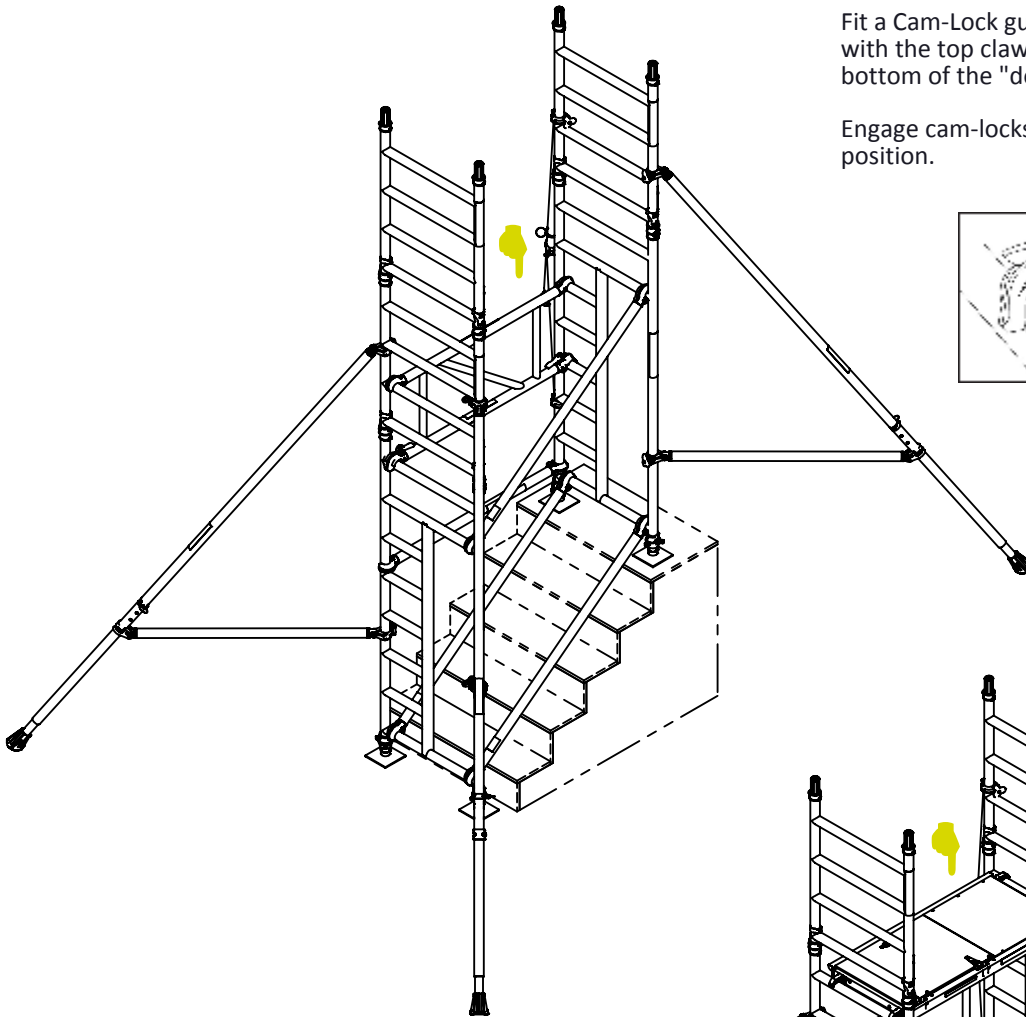
The upper clamp of the stabilisers must be at least 1.5m above the bottom of the frame. Where possible, the stabilisers must also have a minimum outstand of 1.2m.

BUILD METHOD

C8

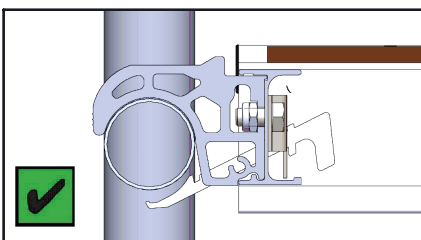
Fit a Cam-Lock guardrail frame to the rear of the tower with the top claws located on the 10th rung from the bottom of the "downstair" frame.

Engage cam-locks as shown to lock guardrail unit in position.



90

Fit a 1.3m trap-door deck onto the 8th rung of the "upstair" portal frame as shown. Ensure the wind lock is in place.



BUILD METHOD

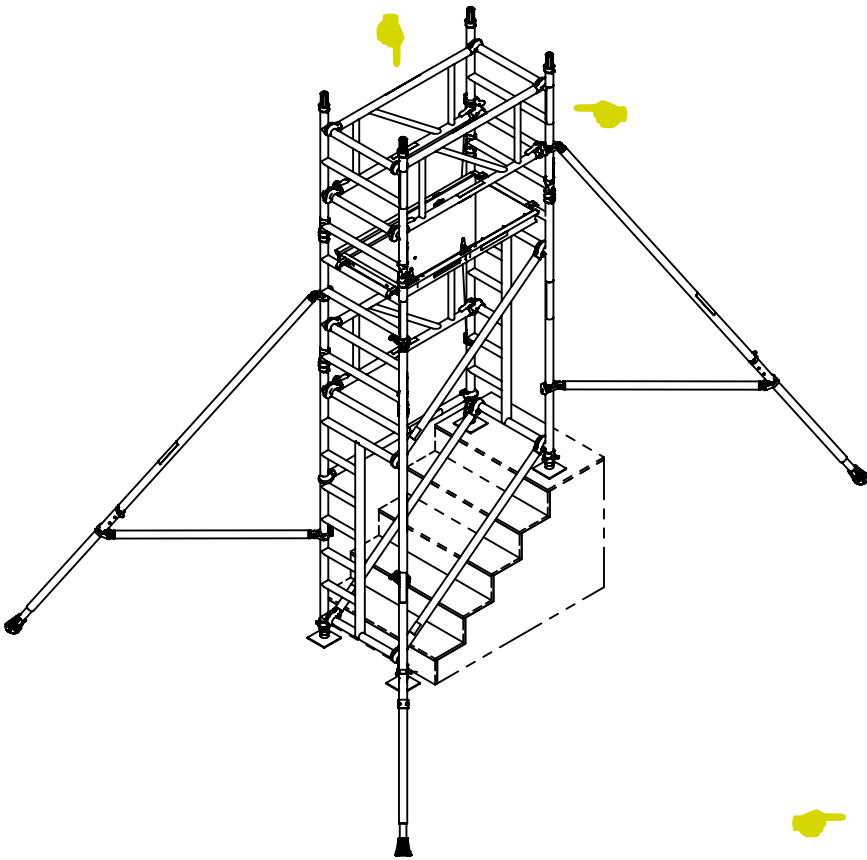
10

From the protected position of the trap door deck (i.e., seated), fit a Cam-Lock guardrail frame on the rear of the tower, with the upper claws located on the 4th rungs above the platform deck.

Repeat with a second Cam-Lock guardrail frame on the front of the tower.

As before, engage cam-locks to lock guardrail units in position.

Do not climb onto the deck until it is fully guardrailed.



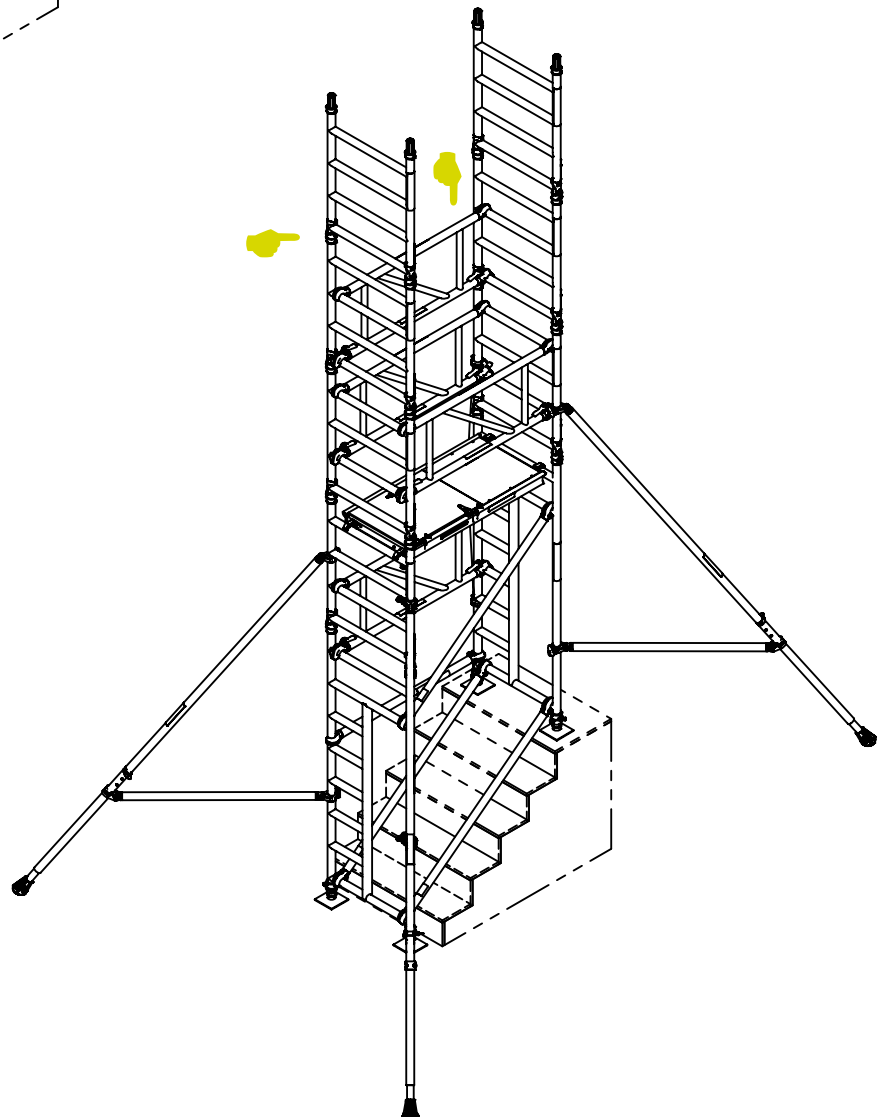
11

Connect two 4 rung frames together and engage interlock clips. Whilst standing on the protected platform deck, fit the connected frames onto the downstair end of the tower. Again, engage interlock clips.

Repeat for the upstairs end of the tower.

Fit a Cam-Lock guardrail to the rear of the tower, with the upper claws located on the 7th rung above the platform deck.

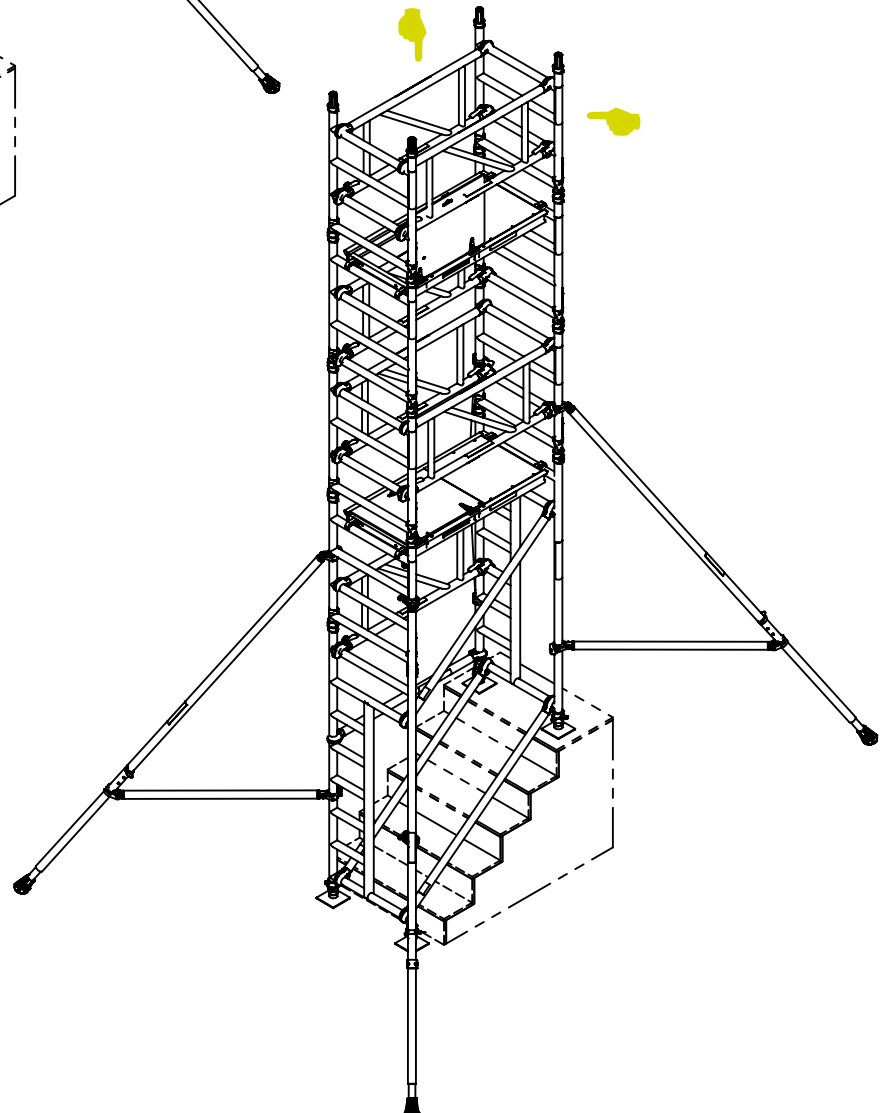
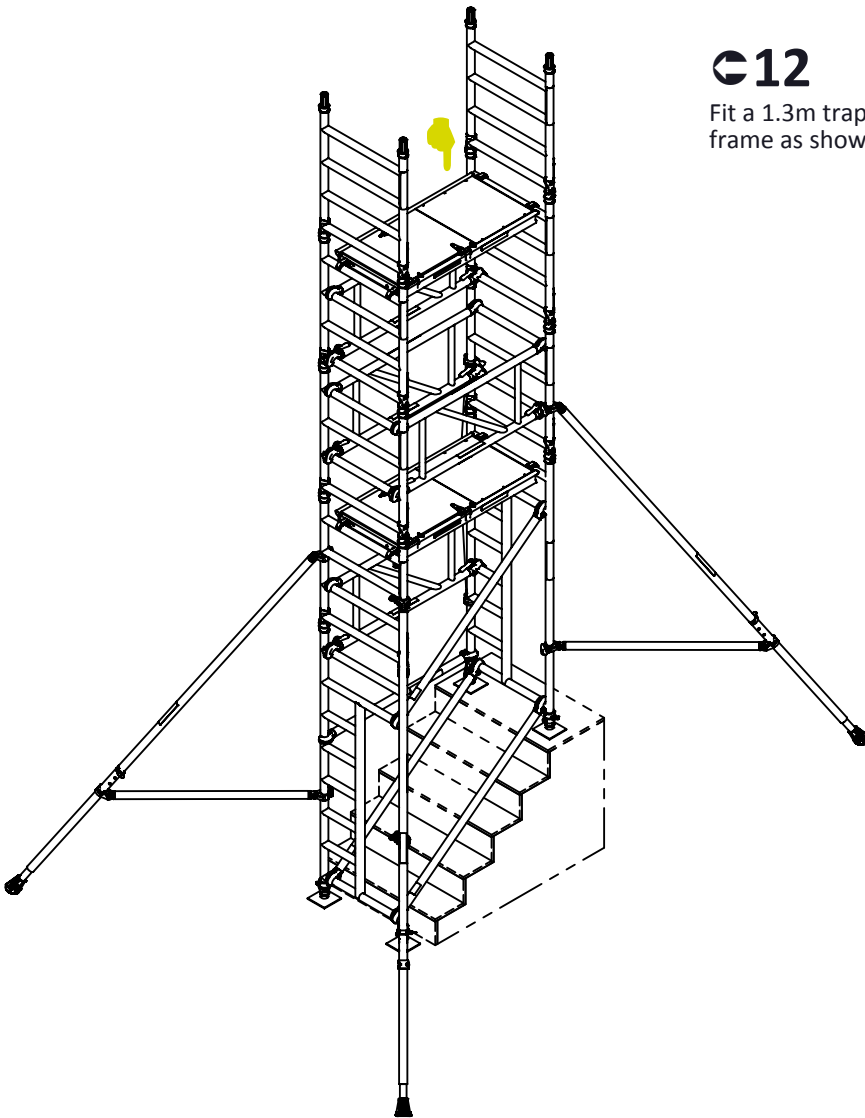
Engage cam-locks to lock guardrail unit in position.



BUILD METHOD

C12

Fit a 1.3m trap-door deck onto the 20th rung of the "downstair" frame as shown. Ensure the wind lock is in place.



13

From the protected position of the trap door deck (i.e., seated), fit a Cam-Lock guardrail frame on the rear of the tower, with the upper claws located on the 4th rungs above the platform deck.

Repeat with a second Cam-Lock guardrail frame on the front of the tower.

As before, engage cam-locks to lock guardrail units in position.

Do not climb onto the deck until it is fully guardrailed.

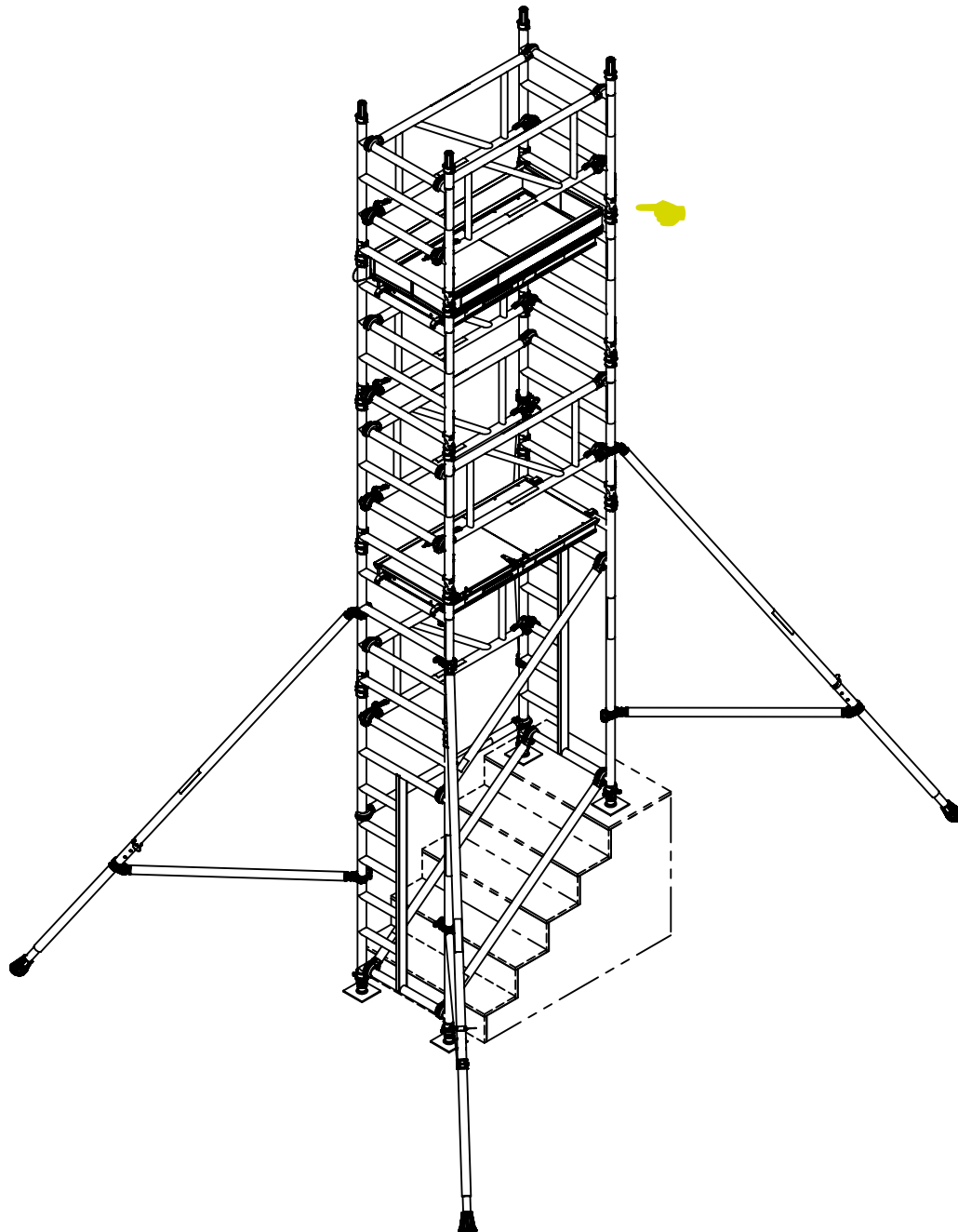
BUILD METHOD

14 ↻

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.



When building beyond 5m platform height:

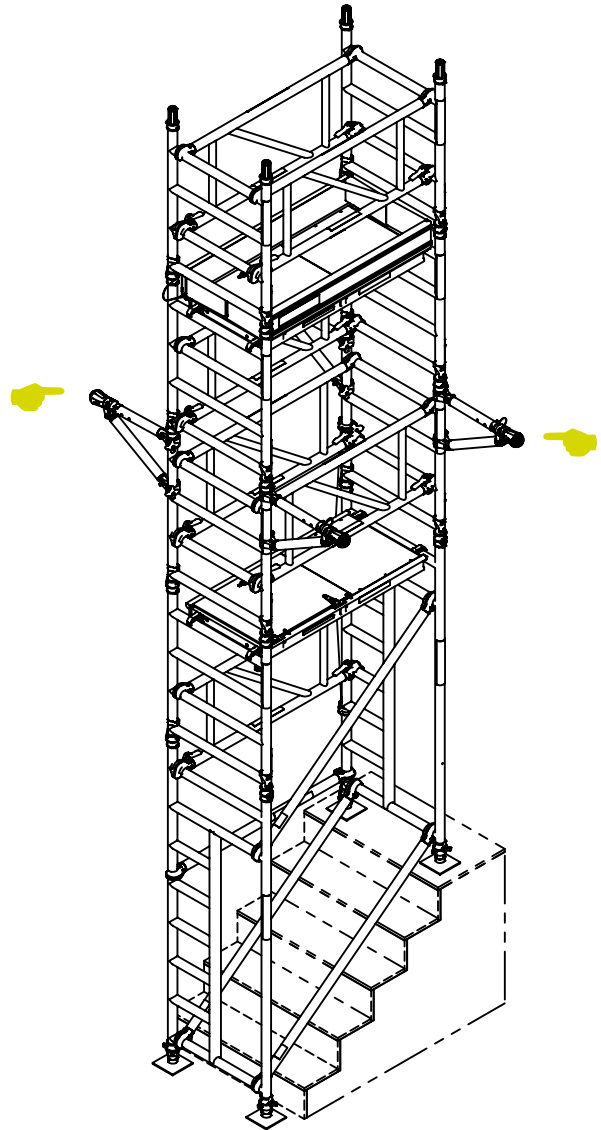
Continue to add pairs of 4 rung frames, Cam-Lock guardrail frames and trap door decks as shown in previous steps. At every platform level add Cam-Lock guardrail frames as guardrails on 2nd and 4th rungs above the platform.

Fit these guardrail frames from the protected trap door position. Do not climb onto the platform until it is fully guardrailed.

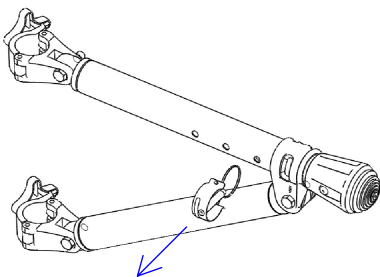
At platform heights from 5m, confined-space stabilisers (or props/ties) must be fitted at 4m intervals as instructed below and on page 6.

Fit a confined-space stabiliser (or prop/tie), to all four corners of the tower as shown, with the upper clamp above the 16th rungs as shown. Secure the lower clamp between the 15th and 16th rungs so that the stabiliser arm is horizontal.

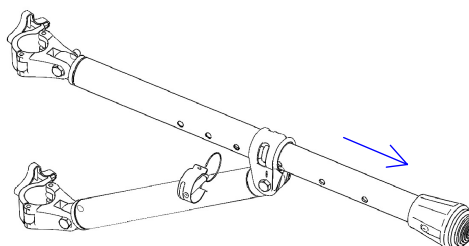
These confined-space stabilisers must be used at platform heights from 5m and shall be fitted every 4m thereafter.



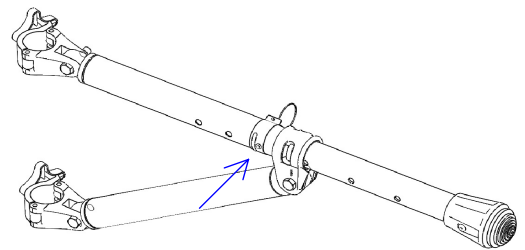
Ensure the end of the stabiliser arm contacts the walls. If it does not, adjust by unclipping and extracting the locking pin, sliding the arm until correct length and hole alignment is achieved. Re-insert the locking pin, ensuring clip is engaged. See images below.



Unclip & extract pin



Extend /retract adjustable arm



Re-insert pin and engage clip

To dismantle a BoSS tower:

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



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