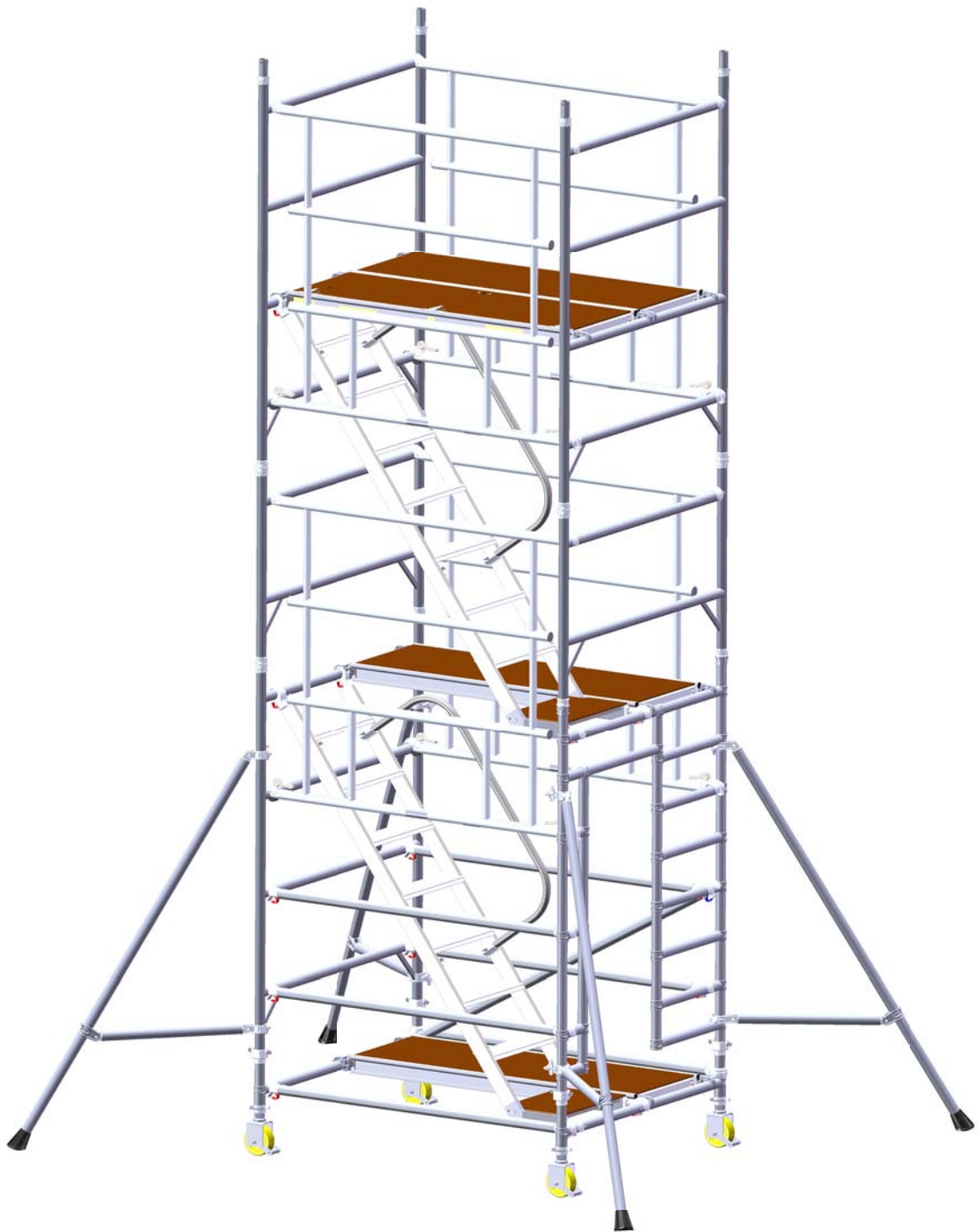


YOUNGMAN

INNOVATIVE WORK AT HEIGHT SOLUTIONS

USERguide



BoSS Stairway with BoSS Multiguard

Mobile Aluminium Staircase Tower

AGR - Advance Guardrail Method

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SAFETY FIRST - TOWER BUILD

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.

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 shall not be used.
- Check if the ground on which the mobile access tower is to be erected and moved to is capable of supporting the tower.
- The safe working load is 275 kg (675lbs), per platform level, uniformly distributed up to a maximum of 950kg (2100lbs) per tower (including self weight).
- Access Towers **must** always be climbed from the inside using the built in ladder or stairway during assembly and use.
- It is recommended that Access Towers should be tied to a solid structure when left unattended.

Lifting of Individual Tower Components

- 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.
- Raising and lowering components, tools and/or materials by rope should be conducted within the tower base. Ensure that the safe working load of the supporting decks and the tower structure is not exceeded.

Movement

- The tower should only be moved by manual effort, and only from the base.
- When moving the tower, beware of live electrical apparatus, particularly over head, plus wires or moving parts of machinery.
- No person or materials should be on the tower during movement.
- Caution should be exercised when wheeling a tower over rough, uneven or sloping ground, taking care to unlock and lock castors. If stabilisers are fitted, they should be lifted a maximum of 25mm above the ground to clear ground obstructions.
- The overall height of the tower when being moved, should not exceed 2.5 times the minimum base dimensions, or 4 metres overall height.
- Before use, check the tower is still correct and complete.
- After every movement of the tower use a spirit level to check that it is vertical and level and set the adjustable legs as required.
- Do not move the tower in wind speeds over 7.7 metres per second (17mph).

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 manufacture repair. Adjustable leg threads should be cleaned and lightly lubricated to keep them free running.
- Brace claws, frame interlock clips, trapdoor latches and platform windlocks should be regularly checked to ensure they lock correctly.
- Refer to the BoSS Inspection Manual for detailed inspection and maintenance advice.
- Components should be stored 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 or incorrect components shall not be used.

During Use

Beware of high winds in exposed, gusty or medium breeze conditions. We recommended that in wind speeds over 7.7 metres per second (17mph), cease working on the tower and do not attempt to move it. If the wind becomes a strong breeze, expected to reach 11.3 metres per second (25mph), tie the tower to a rigid structure. If the wind is likely to reach gale force, over 18 metres per second (40mph), the tower should be dismantled.

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

- Beware of open ended buildings, which can cause funnelling effects.
- Do not abuse equipment.
- The assembled tower is a working platform and should not be used as a means of access or egress to other structures.
- Beware of horizontal forces (e.g. power tools) which could generate instability. **Maximum horizontal force 20kg.**
- Do not use boxes or stepladders or other objects on the platform to gain extra height.

Ties

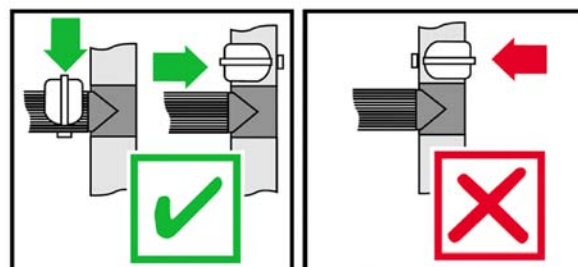
- Ties should be used when the tower goes beyond its safe height, beyond the limits of the stabilisers/outriggers, or if there is a danger of instability. They should be rigid, two way ties fastened to both uprights of the frame with load-bearing right angled or swivel couplers. Only couplers suitable for the 50.8mm diameter tube of the tower should be used. Ideally, ties should be secured to both faces of a solid structure by means of anchorages.
- The tie frequency may vary depending on the application, but they should, at a minimum, be every 4 metres high.
- For further information on tying-in a tower consult the PASMA Technical/Safety Guidance Note: "Tying Mobile Access Towers".

Safety Checklist

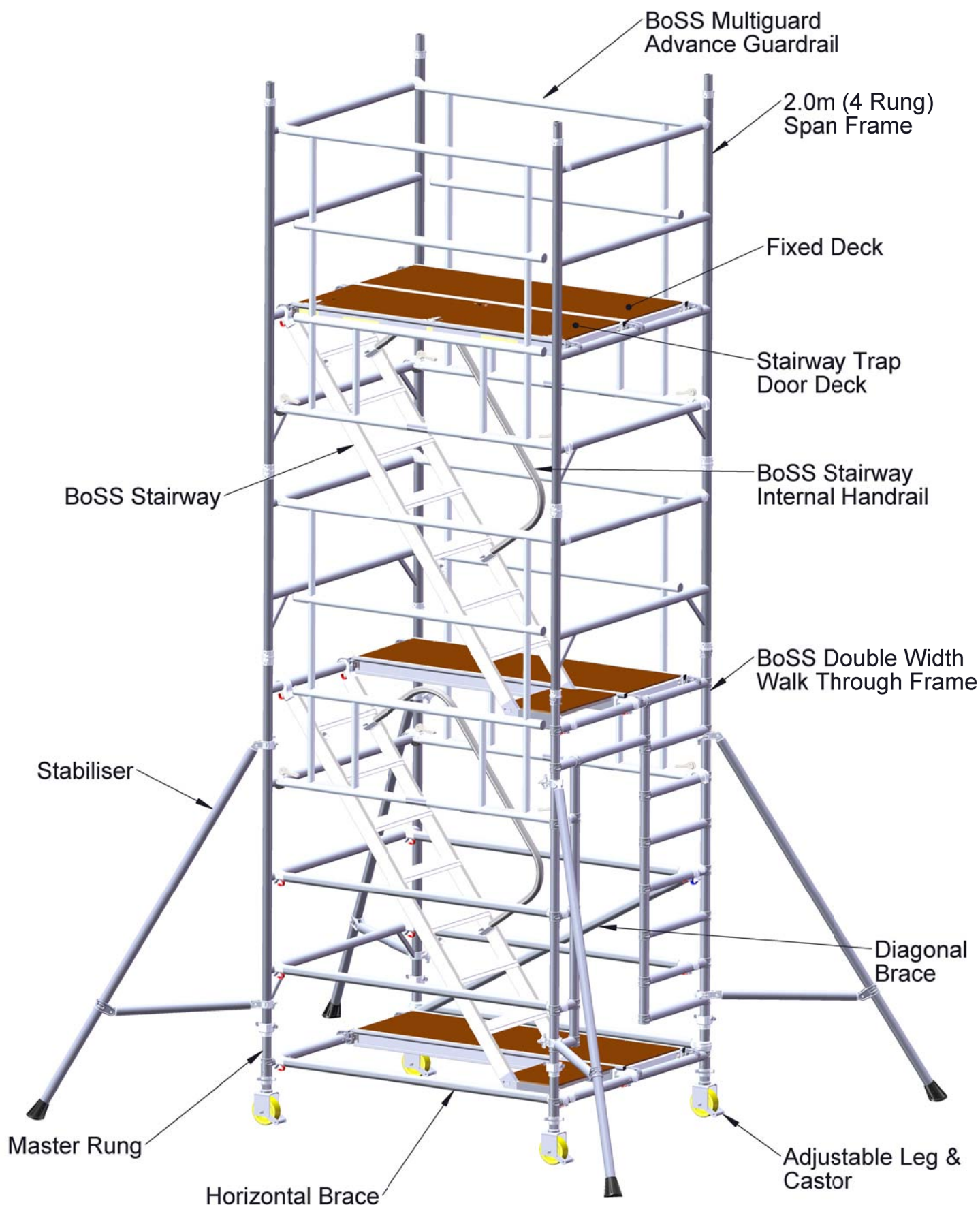
- Ensure all brace claws operate and lock correctly prior to erection
- Inspect components prior to erection
- Inspect tower prior to use
- Tower upright and level
- Castors locked and legs correctly adjusted
- Diagonal braces fitted
- Stabilisers fitted as specified
- Platforms located and windlocks engaged
- Toeboards located
- Check guardrails are fitted correctly & positively locked

Refer to this checklist before using each time.

Ensure horizontal braces and guardrails are fitted correctly. Always fit as shown.



COMPONENT DIAGRAM



QUANTITY SCHEDULES

Boss Stairway with BoSS Multiguard - 1450mm Wide x 1.8m & 2.5m								
AGR Method			Internal or external use				Internal use only	
Working Height (m)			4.4	6.4	8.4	10.4	12.4	14.4
Platform Height (m)			2.4	4.4	6.4	8.4	10.4	12.4
Ø125mm / Ø150mm / Ø200mm Castor			4	4	4	4	4	4
Adjustable leg			4	4	4	4	4	4
Master Rung			2	2	2	2	2	2
2 Rung Span Frame (1.0m high x 1.45m wide)			2	2	2	2	2	2
Double Walk Through End Frame (2.0m high x 1.45m wide)			1	1	1	1	1	1
4 Rung Span Frame (2.0m high x 1.45m wide)			1	3	5	7	9	11
Stairway Trap Door Deck			1	1	1	1	1	1
1.8m/ 2.5m Fixed Deck			2	3	4	5	6	7
1.8m / 2.5m Horizontal Brace			6	6	6	6	6	6
1.8m / 2.5m Diagonal Brace			1	1	1	1	1	1
Side Toe Board			2	2	2	2	2	2
End Toe Board			2	2	2	2	2	2
Toe Board Holder			4	4	4	4	4	4
BoSS Stairway			1	2	3	4	5	6
Stairway Internal Hand Rail			1	2	3	4	5	6
BoSS Multiguard			2	4	6	8	10	12
SP7			4	4				
SP10					4	4	4	4
SP15								
Total Self Weight of Tower (Kg) - 1.8m			175	240	317	382	446	511
Total Self Weight of Tower (Kg) - 2.5m			201	274	360	433	507	580

Number of Working Platforms Allowed

The MAXIMUM SAFE WORKING LOAD (the combined weight of the users, tools and materials) that maybe placed on the tower is the total weight of the tower less the self weight of the tower. The total weight for the towers shown in the schedule is 950kg.

Example 1

A 1450 tower built using the AGR method with an 8.4m platform height and a platform length of 2.5m has self weight of 433kg:

950kg - 433kg = 517 kg maximum safe working load

Platform Loading

On a 1450 tower a platform may comprise of one deck or two decks placed side by side. 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 which includes double guardrails to all platforms. Toe boards will need to be added if any levels are used as working platforms and for storage of materials.

STABILISERS

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

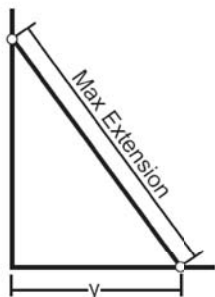
Attach one stabiliser to each corner of the tower as shown. Ensure stabiliser feet are equally spaced to form a square.

SP10 & SP15 telescopic stabilisers must always be fully extended.

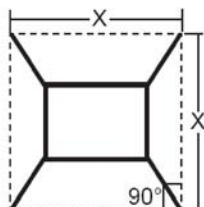
Position the lower clamp so that the lower arm is as close to horizontal as possible. Adjust the position of the top clamp to ensure the stabiliser foot is in contact with the ground. Ensure clamps are secure.

Stabilisers are used when the tower is to be moved occasionally, frequent movement will require mobile outriggers. When moving the tower, adjust the top clamps to lift the four stabiliser feet a maximum of 25mm off the ground and then unlock the castor brakes. After moving ensure all four stabiliser feet are repositioned in firm contact with the ground.

STABILISER DIMENSIONS

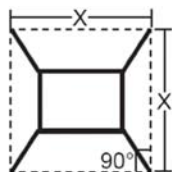


	y
SP7	1227
SP10	2241
SP15	2757



Single Width 850 Towers Dimension X

	Platform Length 1.8m	Platform Length 2.5m
SP7	X= 2994	X= 3201
SP10	X= 4458	X= 4734
SP15	X= 5195	X= 5485



Double width 1450 Towers Dimension X

	Platform Length 1.8m	Platform Length 2.5m
SP7	X= 3351	X= 3629
SP10	X= 4789	X= 5100
SP15	X= 5520	X= 5838

BUILD METHOD

When building a BoSS tower:

- To comply with the Work at Height Regulations we show assembly procedures with platforms every 2 metres in height and the locating of guardrails in advance of climbing onto a platform to reduce the risk of a fall.
- All platforms feature double guardrails on both faces of either individual platforms or fully decked levels.
- All guardrails should be 2 and 4 rungs (0.5m and 1.0m) above platforms.
- 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.

To dismantle a BoSS tower:

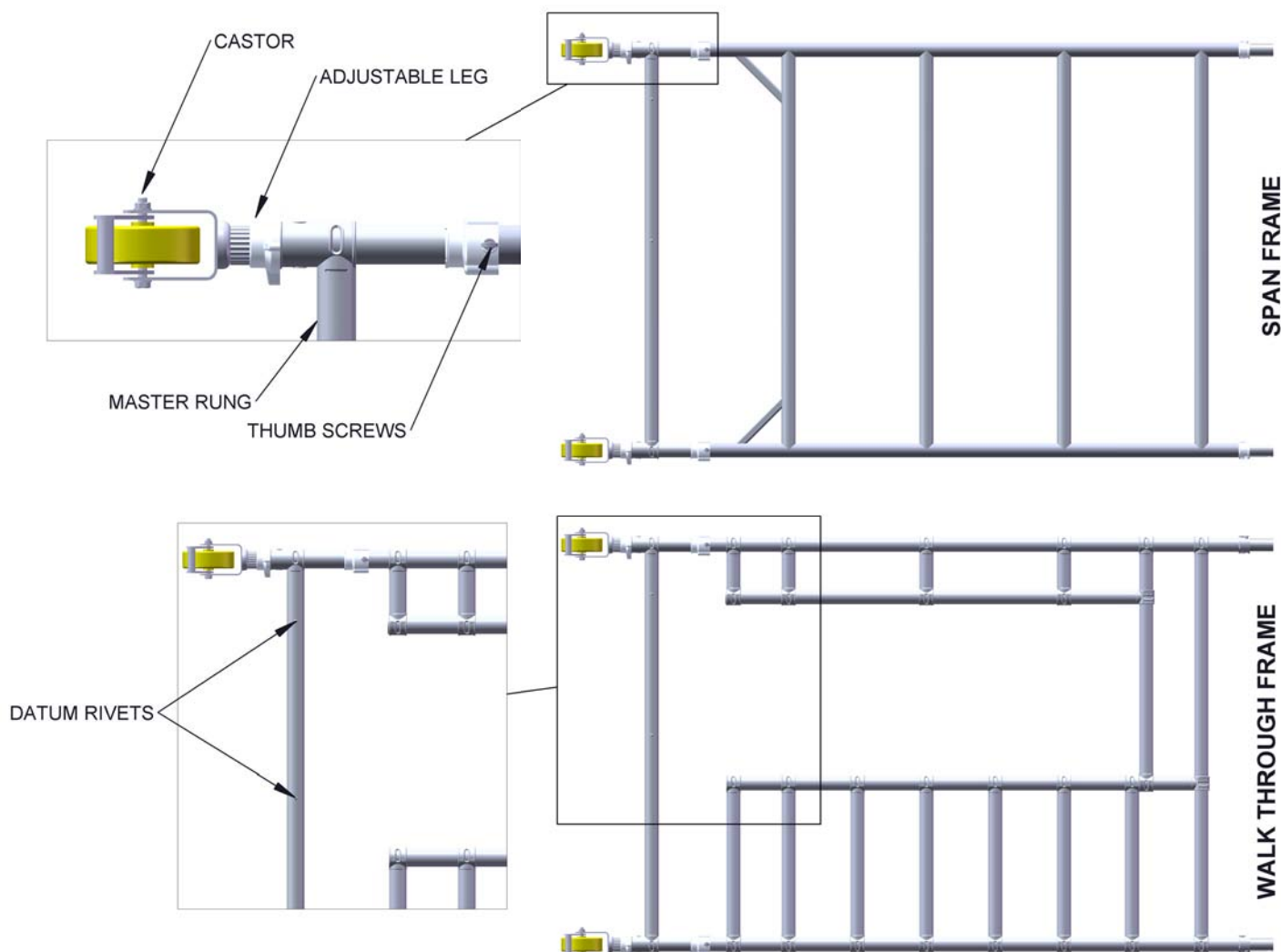
- Remove toeboards, and pass down the tower.
- Unclip farthest end of braces and immediately go to protected trapdoor position on ladder to complete removal.
- Remove upper platforms from protected platform levels below.
- Pass removed components out of the tower to a colleague.

The procedure illustrated shows 4.4m platform height tower.

Youngman recommend two persons are used to build BoSS Staircase tower. Only climb the tower from the inside.

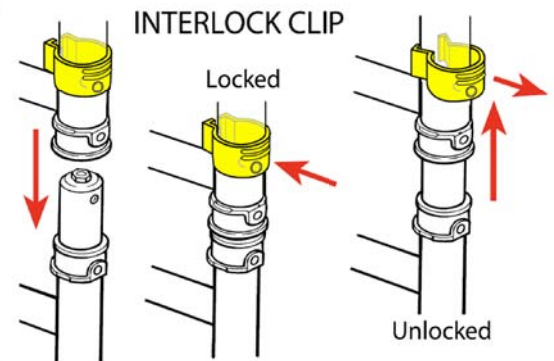
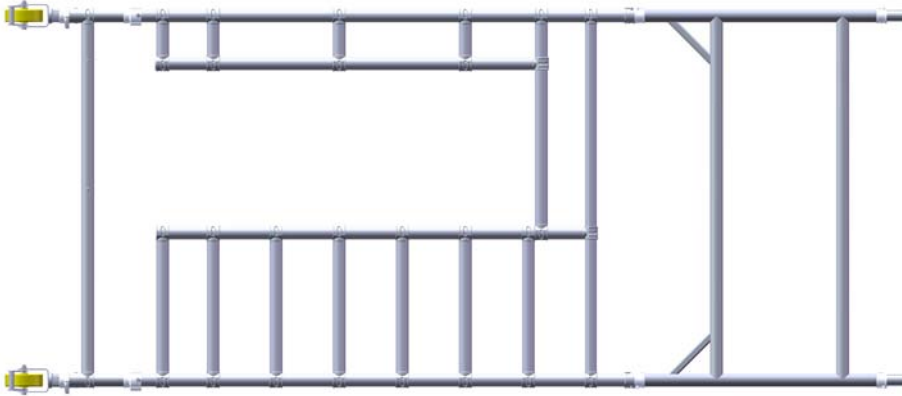
1 Fit master rung to 4 rung (2.0m) span frame but do not tighten the thumb screws at this stage. Push castor and adjustable leg together and insert into frame. Now tighten the thumb screws. Repeat with walk through frame, but ensure that datum rivets on master rung are below walk through part of frame. Lock castors. Base plates can be fitted to adjustable legs if tower is static.

NB: If you do not require direct access onto the staircase use one 2.0m 4 rung frame in lieu of the walk through frame.



BUILD METHOD

2 Fit one 1.0m (2 rung) span frame to the top of the walk through assembly. Ensure interlock clips are connecting the frames together. Repeat with the span frame assembly.



3 Lift the span frame assembly to an upright position. Fit one horizontal brace (red) onto the vertical of the master rung, with the claw facing outwards. The frame will now be self supporting.
Note: All locking claws must be opened before fitting.



BUILD METHOD

3 Position the walk through end frame assembly as shown and fit the other end of the horizontal brace onto the vertical, just above the bottom rung. Fit a second horizontal brace between the bottom rungs on the other side of the frames to square the tower. Fit a diagonal brace between the 1st and 5th rungs of the tower, as shown below.

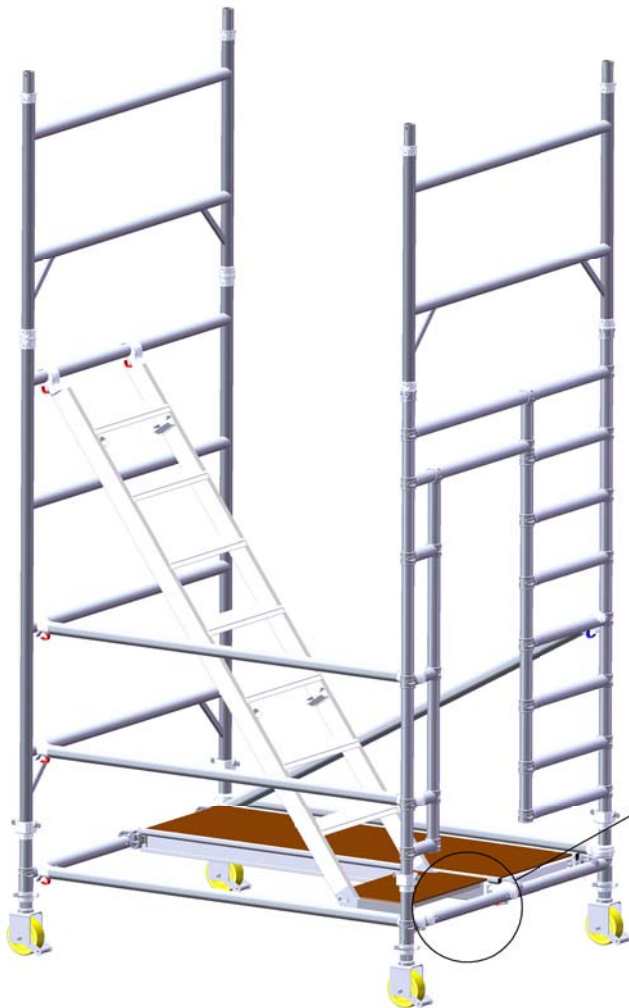


4 Fit two horizontal braces (red) to the rungs of the tower, as shown. Ensure the frames are vertical and level by checking with a spirit level and setting the adjustable legs as required.

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

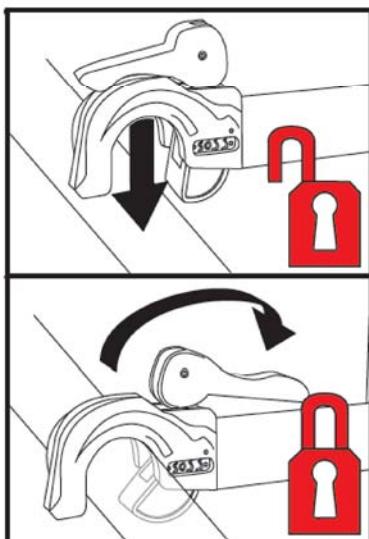


BUILD METHOD



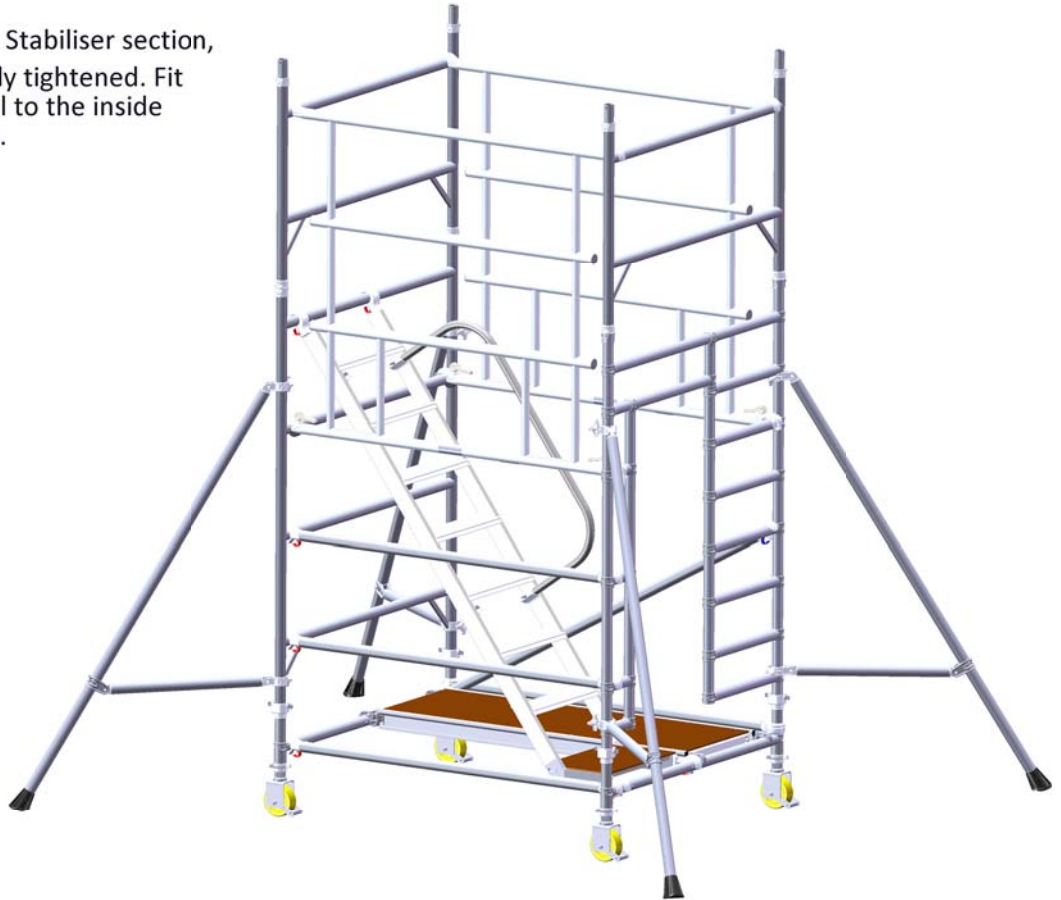
5 Position a fixed deck next to the diagonal brace, as shown below. Fit the stairway unit between the master rung and the top cross member of the span frame. Ensure that the stairway claws are positioned outside the datum rivets on the master rung as shown.

6 Fit an AGR on both sides of the tower. The top hooks of the AGR must be fitted to the top rungs of the 1.0m (2 rung) frame, as shown. The AGR should be placed up against the end frame verticals.



BUILD METHOD

7 Fit stabilisers (See notes in Stabiliser section, page 7). Ensure clamps are fully tightened. Fit the Internal Stairway Guardrail to the inside face of the stairway, as shown.

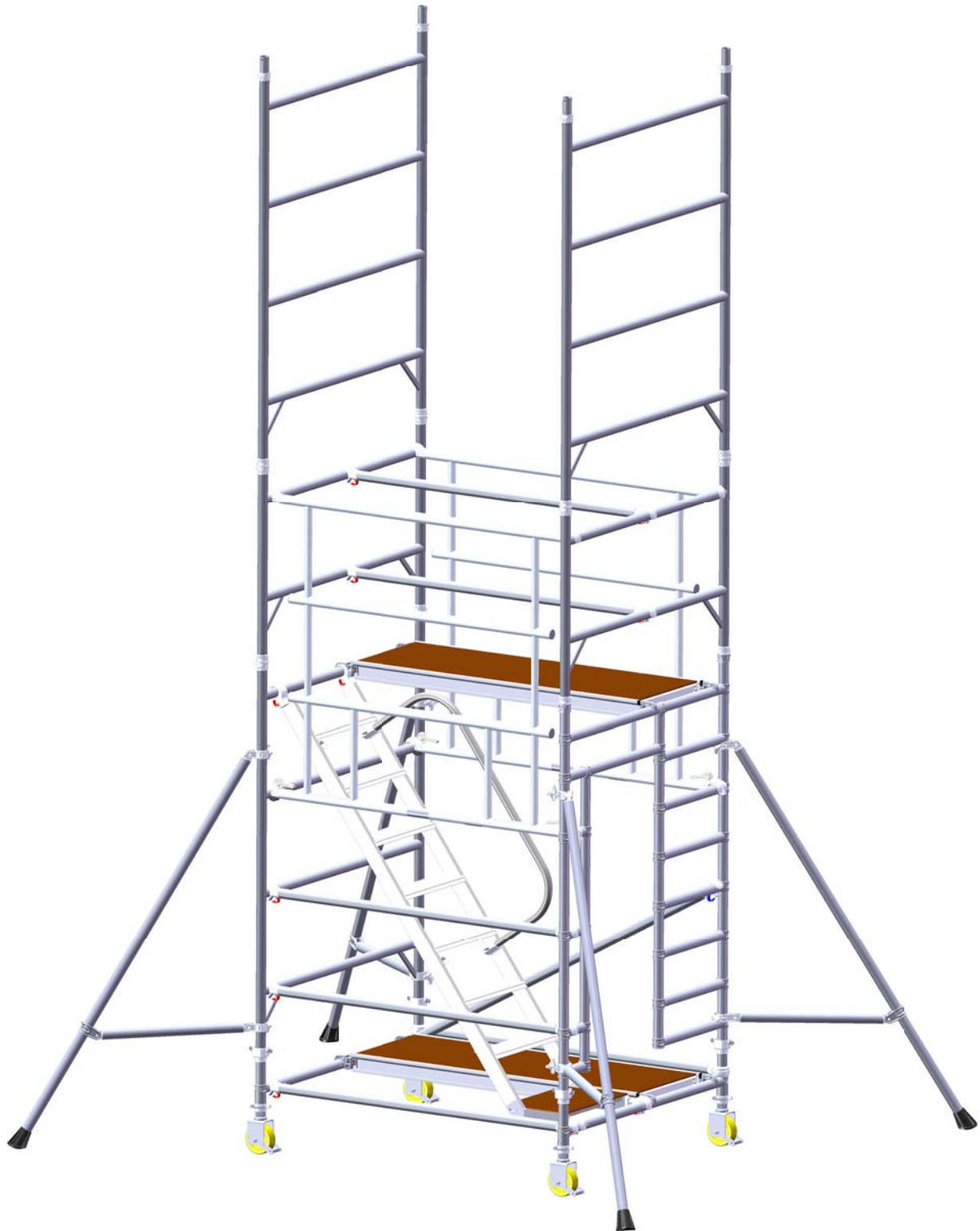


8 Fit a fixed deck to the top rung of the walk through frame, directly above the lower fixed deck. Climb the stairway, sit on the platform and fit a pair of temporary horizontal guardrails to the centre of the tower, as shown below. Climb onto the guardrailed platform.



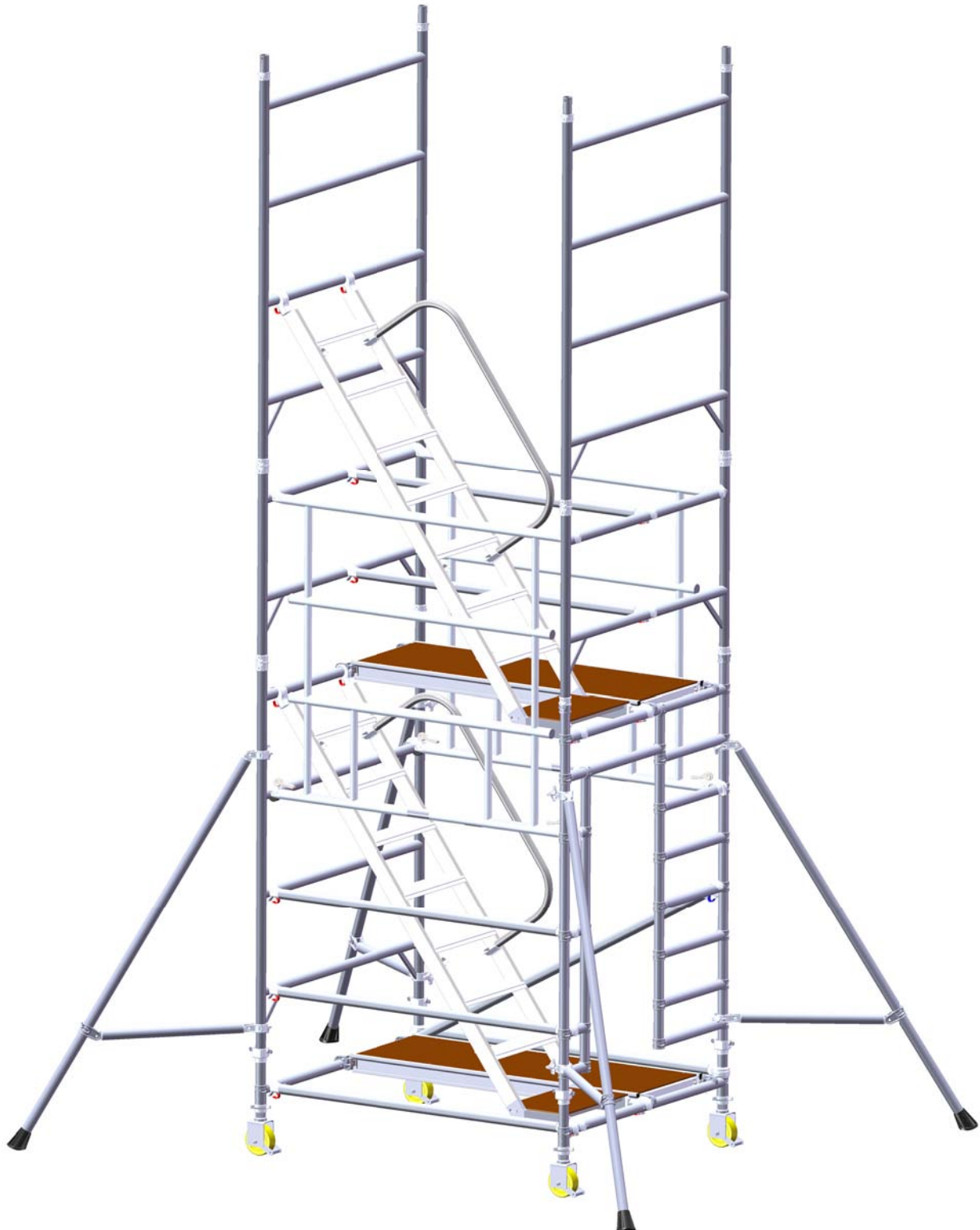
BUILD METHOD

- 9** Standing on the fully guardrailed platform, fit a 4 rung (2.0m) span frame at either end of the tower.



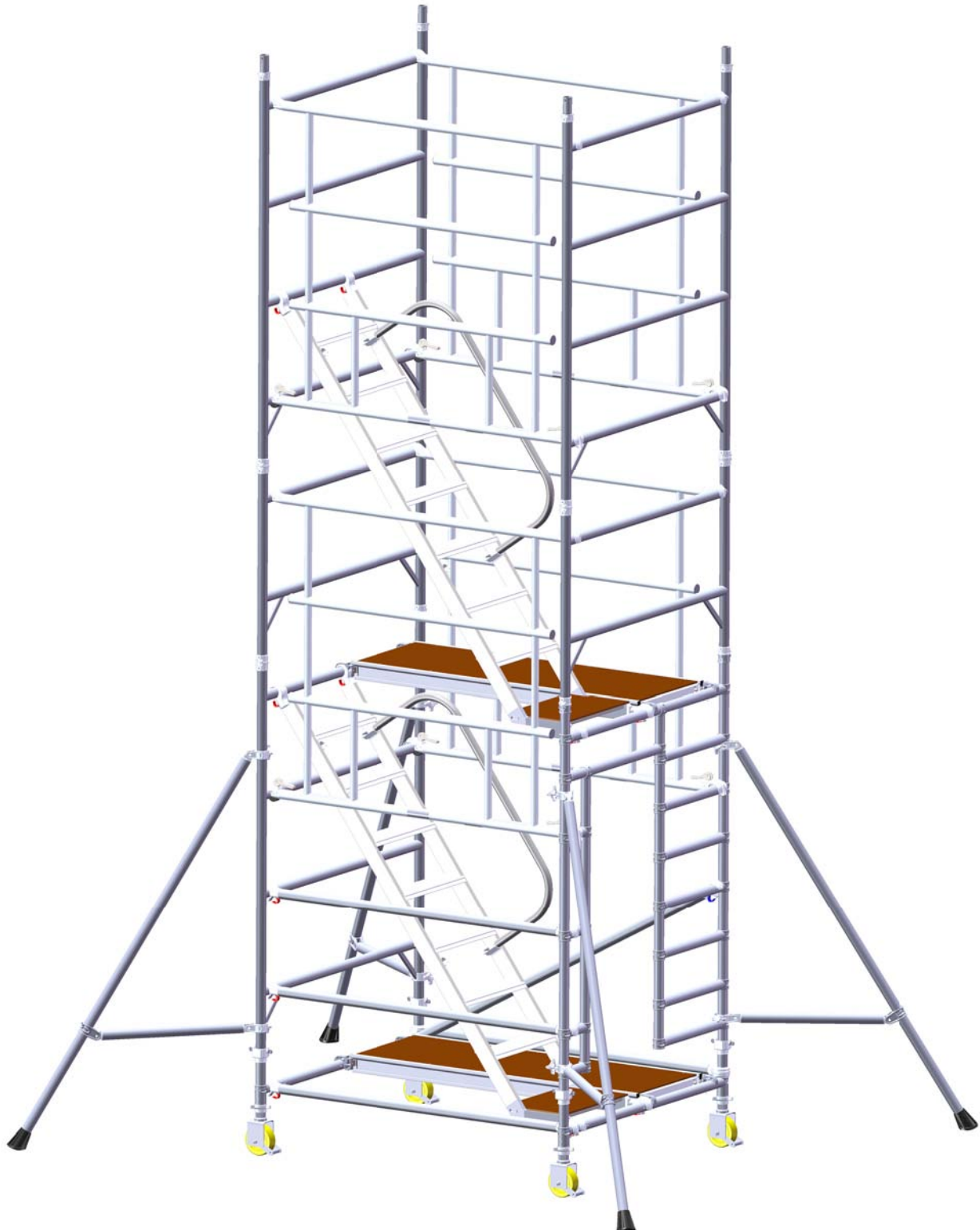
BUILD METHOD

10 Standing on the fully guardrailed platform, fit the next stair case above the first with the landing claws fitted to the top cross member of the walk through frame. Remove the inner guard rails and walk onto the stairway. Check that the lower claws of the stairway guardrail are locked onto the end frame vertical. Fit the internal stairway hand rail.



BUILD METHOD

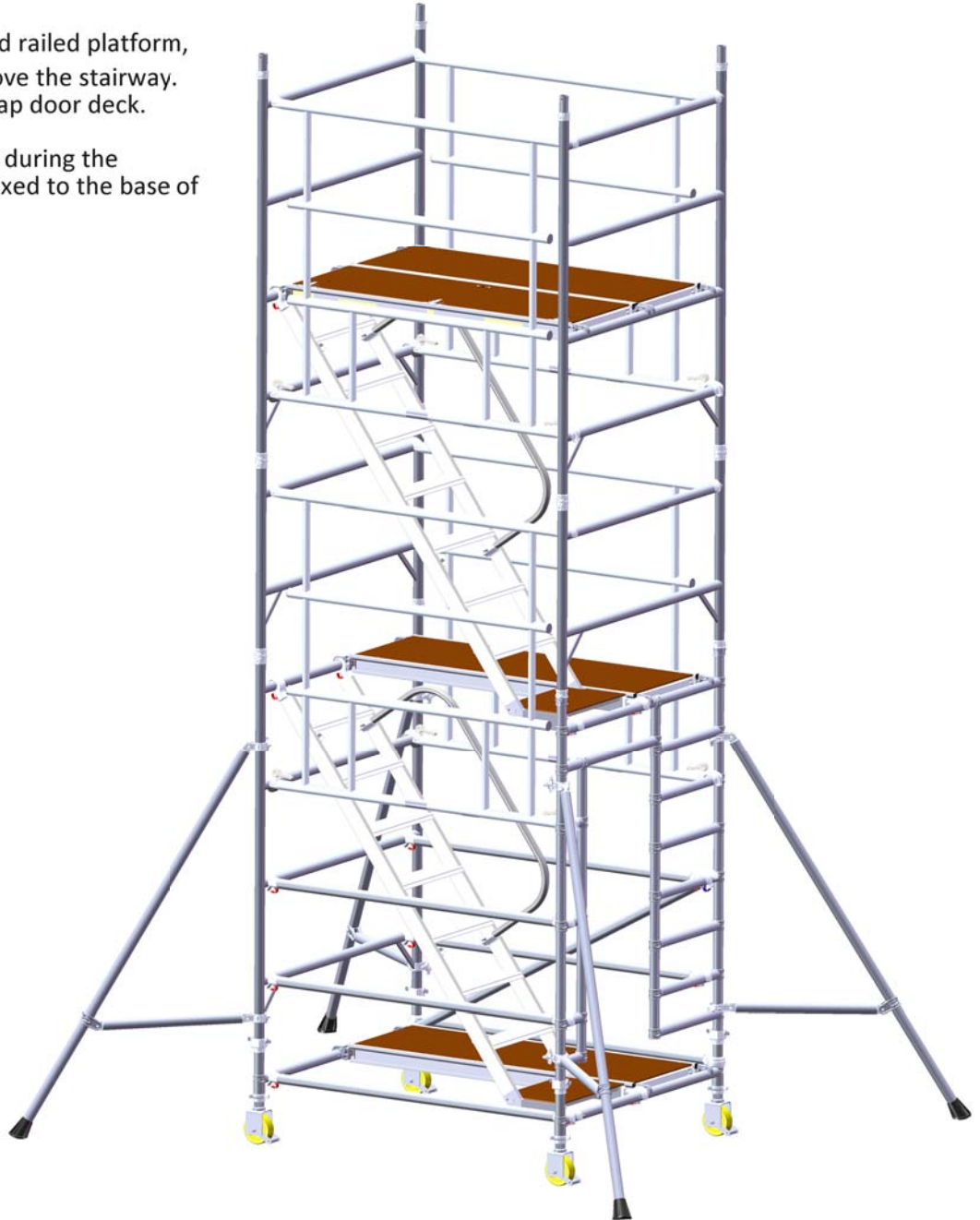
- 11** Fit an AGR on both sides of the tower. The top hooks of the AGR must be fitted to the top rungs of the 2.0m (4 rung) frame, as shown.
The AGR should be placed up against the end frame verticals.



BUILD METHOD

12 Standing on the fully guard railed platform, fit a staircase trapdoor deck above the stairway. Place a fixed deck next to the trap door deck.

The temporary guardrails, using during the assembly process, can now be fixed to the base of the tower, on the far side.



13 Fit toeboards to the working levels.

The tower is now complete.

When building beyond 4.4m platform height:

Continue to add end frames, AGR's, stairways as shown in the previous steps until the desired platform height is reached.

