

A SAFER WAY TO REACH NEW HEIGHT

UTS SALES^{AND} REPAIRS

UTS 1450/850 MOBILE ACCESS TOWER MANUAL

UTS 250 THROUGH THE TRAP (3T)

Manufacturer of Aluminium Access Equipment
www.towersandpodiums.co.uk



Safety Information:

This assembly guide is intended to provide you with a step-by-step instruction on how to erect your Mobile Access Tower with ease and safety, using the 3T (through the trapdoor) method.

You should read and understand all notes and diagrams, including the parts list for each height, before commencing assembly. Personnel should be qualified or competent to erect this tower.

Remember to do a risk assessment of the area where the tower is to be used before commencing erection.

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SAFETY FIRST

INTRODUCTION:

Please read this guide carefully.

Please note that diagrams are for illustrative purposes only.

UTS mobile aluminium towers are light weight scaffold towers used throughout the building and construction industry 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 UTS 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 guides or any other help with this product, please contact UTS Sales and Repairs Ltd on 01227 860085 or email info@utssalesandrepair.co.uk

Compliances

The UTS 250 aluminium system has been designed, tested, approved and conforms to EN 1004: 2004 Class 3

Instruction Manual EN 1298-IM-EN

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.

- Check that all components are on site, undamaged and they are functioning correctly. Damaged or incorrect components shall not be used
- Check if the ground on which the mobile access tower is to be erected and moved is capable of supporting the tower
- The safe working load is 275kg (606lbs), per platform level, uniformly distributed up to a maximum of 950kgs (2100lbs) per tower (including self-weight).
- Towers must always be climbed from the inside during assembly and use
- It is recommended that towers should be tied to a solid structure when left unattended
- Adjustable legs should only be used for levelling. Adjustable legs should only be extended to minimum amount required to level the tower

LIFTING OF EQUIPMENT:

Tower components should be lifted using a reliable lifting material (e.g. strong rope), employing a reliable knot (e.g. clove hitch), to ensure safe fastening and always lift within the footprint of the tower. Assembled mobile towers should not be lifted with a crane or other lifting devices.

STABILISERS/ BALLAST:

Stabilisers and ballast weights shall always be fitted when specified. The quantity schedules show the recommended stabilisation. In circumstances where there is restricted ground clearance for stabilisers, contact your supplier for advice. Ballast must be solid materials (i.e. not water or loose sand) and should not be positioned to overload individual legs. Ballast should be secured against accidental removal where practicable, and be supported on the lowest rung of the bottom frame.

MOVEMENT:

Movement of the tower is strictly prohibited if any material, equipment or persons are on any of the platforms...

- Check that the route of movement is clear and free from obstacles, hazards* or voids and the floor can support the weight of the tower.
- Do not move any tower structure in wind speeds over 7.7m per second (17mph).
- Dismantle the tower to a maximum height of 4m
- If stabilisers are fitted, raise them a maximum of 25mm above ground level (to clear uneven ground) and clamp tight.
- Check that the tower structure is secure and safe to move.
- Restrain the tower from unintentional movement and unlock all four castors.
- Move tower using manual effort only, applied at the base.
- Re-lock all four castors and re-position stabilisers (if fitted) as per this user guide.
- Using a spirit level, check tower is level and vertical and adjust the adjustable legs as required.
- Do not use adjustable legs to increase the overall height of the tower.
- Rebuild the tower (by competent person) to the intended working height. Inspect completed tower (by competent person) and record inspection.

NOTE: The work at height recommendations (reg 12 (2)) require that where the safety of work and equipment depends on how it is installed or assembled, it is not used after installation or assembly in any position unless it has been inspected in that position.

* Include electrical hazards, moving machinery, access restrictions, overhead cables etc.

DURING USE:

Beware of high winds in exposed, gusty or medium breeze conditions. We recommend that in wind speeds over 7.7 metres per second (17 mph), 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 (25 mph), tie the tower to a rigid structure. If the wind is likely to reach gale force, over 18 metres per second (40 mph), the tower should be dismantled.

Wind	Beaufort Scale 10 Metres above ground	Force	Speed in m.p.h.	Speed in knots
Moderate Breeze	Raises dust and loose paper, small branches move.	4	13–18	11–16
Strong Breeze	Large branches in motion, telegraph wires whistle.	6	25–31	22–27
Gale Force	Walking is difficult, twigs break off trees.	8	39–46	34–40

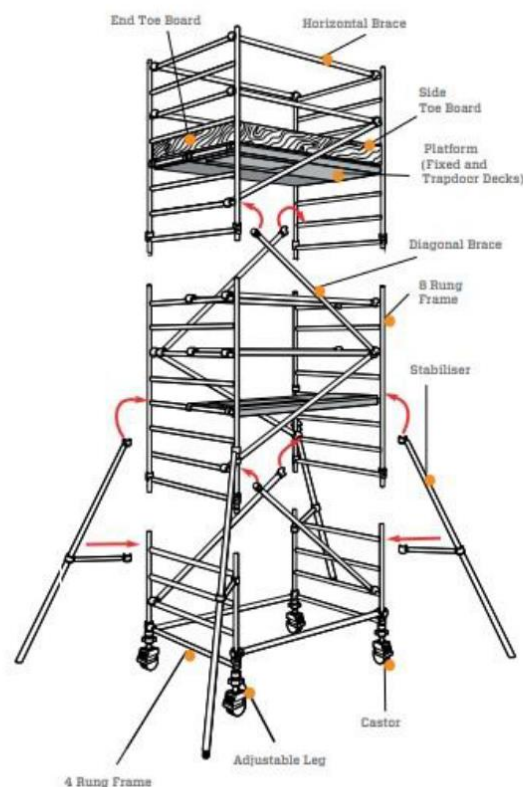
- Beware of open-ended buildings, which can cause funnelling effect.
- Do not abuse equipment. Damaged or incorrect components shall not be used.
- Raising and lowering components, tools, and/or materials by rope should be conducted within the tower base. Ensure that the safe working load of the supporting decks and the tower structure is not exceeded.
- 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 20 kg.**
- The stairway towers, featuring an inclined staircase access, are for frequent use by personnel carrying tools and/or materials
- Mobile towers are not designed to be suspended - please refer to your supplier for advice.
- 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 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 meters height.
- For further information on tying- in a tower please contact your supplier or UTS Sales and Repairs Ltd.

MAINTENANCE – STORAGE – TRANSPORT:

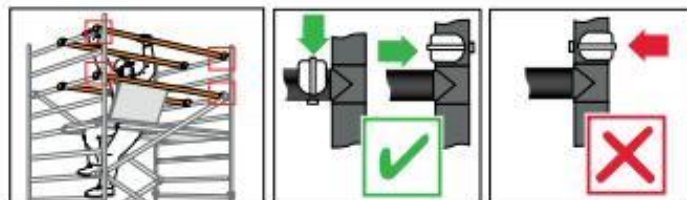
- All components and their parts should be regularly inspected to identify damage, particularly to joints. Lost or broken parts should be replaced, and any tubing with indentation greater than 5mm should not be used and put to one side for manufacture repair. Adjustable leg threads should be cleaned and lightly lubricated to keep them free running.
- Brace claws, frame interlock clips, trapdoor latches and platform wind locks should be regularly checked to ensure they lock correctly.
- Refer to the UTS 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 CHECKLIST

MOBILE TOWERS – 3T METHOD – CHECKLIST:

- Ensure all brace claws operate and lock correctly prior to erection.
- Inspect components prior to erection.
- Inspect tower prior to use and after movement and as required by current legislation.
- Tower upright and level.
- Castors locked and legs correctly adjusted.
- Diagonal braces fitted.
- Stabilisers/outriggers fitted as specified.
- Platforms located and wind locks on.
- Toe boards located.
- Check guardrails are fitted correctly. See illustration below...



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

Refer to this checklist before using each time.

QUANTITY SCHEDULE - 1450

NUMBER OF WORKING PLATFORMS ALLOWED:

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

Example 1:

- A 1450 UTS tower built using the 3T method with a 4.2m platform height and a platform length of 1.8m has a self-weight of 196kg.
- 950kg total weight — 196kg self-weight = 754kg maximum safe working load (users, tools and materials).

Example 2:

- A 1450 UTS tower built using the AGR method with a 11.7m platform height and a platform length of 2.5m has a self-weight of 534kg.
- 950kg total weight — 534kg self-weight = 416kg maximum safe working load (users, tools and materials). For greater heights and loads, consult UTS for guidance.

PLATFORM LOADING:

On a 1450 250 tower a platform comprises of two decks 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 both decks.

UTS towers to be built safely and therefore comply with the requirements of the Work at Height Regulations. They include the 3T method to all platforms, and toe boards for the top platform only. Additional toe board sets will need to be added if any other levels are used as working platforms or for storage of materials.

EN 1004 requires platforms at least every 4.2m, and these measures will exceed that requirement

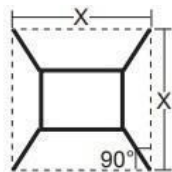
BALLAST: INTERNAL/EXTERNAL USE:

There is no requirement for ballast on 1450 towers if using stabilisers.

STABILISERS:

To improve stability, larger stabilisers can be used at a lower level.

Angle of Stabiliser 1450 TOWER



	Platform Length 1.8M	Platform Length 2.5M
S1	X = 3351	X = 3629
S2	X = 4789	X = 5100

QUANTITY SCHEDULE - 1450

	3.2	3.7	4.2	4.7	5.2	5.7	6.2	6.7	7.2	7.7	8.2	8.7	9.2	9.7	10.2	10.7	11.2	11.7	12.2	12.7	12.3	13.7	14.2	
Working Height	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	6.7	7.2	7.7	8.2	8.7	9.2	9.7	10.2	10.7	11.2	11.7	12.2	
150MM Castor	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
Adjustable Leg	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
1450 4 Rung Frame	2	2	2		2	2	2			2	2			2	2			2		2				
1450 6 Rung Frame	2			2		2		2		2		2		2		2		2		2				
1450 8 Rung Frame	2		2	2	4	2	4	4	6	4	6	8	6	8	8	8	10	8	10	10	10	12	10	12
1.8m/2.5m Trap Deck	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	5	6	6	6
1.8m/2.5m Horizontal Brace	6	6	6	6	10	10	10	10	14	14	14	14	18	18	18	18	22	22	22	22	22	26	26	26
2.1m/2.7m Diagonal Brace	2	3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	23
1.8m/2.5m Toe board Set	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S1 Stabiliser	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
S2 Stabiliser																								

KGS	93	101	106	150	165	174	180	201	216	238	244	265	280	288	310	316	331	339	346	367	382	390	397	
Total weight 1.8m																								
KGS	110	118	123	173	190	198	206	232	249	271	278	305	322	330	352	364	381	390	397	424	441	449	456	
Total Weight 2.5M																								

QUANTITY SCHEDULE - 850

NUMBER OF WORKING PLATFORMS ALLOWED:

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

Example 1:

- An 850 UTS tower built using the 3T method with a 4.2m platform height and a platform length of 1.8m has a self-weight of 159kg.
- 950kg total weight — 159kg self-weight = 791kg maximum safe working load (users, tools and materials).

Example 2:

- An 850 UTS tower built using the 3T method with a 10.2m platform height and a platform length of 2.5m has a self-weight of 350kg.
- 950kg total weight— 350kg self-weight = 600kg maximum safe working load (users, tools and materials).

For greater heights and loads, consult UTS for guidance.

PLATFORM LOADING:

On an 850 tower a platform comprises of a single deck only. The maximum safe working load (the combined weight of the users, tools and materials) that may be placed on a platform is 275kg, evenly distributed over the deck.

UTS towers to be built safely and therefore comply with the requirements of the Work at Height Regulations. They include all platforms, and toe boards for the top platform only. Additional toe board sets will need to be added if any other levels are used as working platforms or for storage of materials.

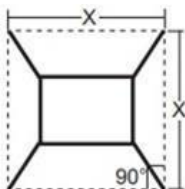
EN 1004 requires platforms at least every 4.2m, and these measures will exceed that requirement.

BALLAST: INTERNAL/EXTERNAL USE:

There is no requirement for ballast on 850 towers if using stabilisers.

STABILISERS:

To improve stability, larger stabilisers can be used at a lower level.



	Platform Length 1.8M	Platform Length 2.5M
S1	X = 2994	X = 3201
S2	X = 4458	X = 4734

QUANTITY SCHEDULE - 850

Working Height	3.2	3.7	4.2	4.7	5.2	5.7	6.2	6.7	7.2	7.7	8.2	8.7	9.2	9.7	10.2	10.7	11.2	11.7	12.2	12.7	13.2	13.7	14.2	
Platform Height	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	6.7	7.2	7.7	8.2	8.7	9.2	9.7	10.2	10.7	11.2	11.7	12.2	
150MM Castor	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Adjustable Leg	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
1450 4 Rung Frame	2	2	2			2	2			2	2			2	2			2	2					
1450 6 Rung Frame	2			2		2		2		2		2		2		2		2		2				
1450 8 Rung Frame	2		2	2	4	2	4	4	6	4	6	6	8	8	8	10	10	8	10	10	12	10	10	12
1.8m/2.5m Trap Deck	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
1.8m/2.5m Horizontal Brace	6	6	6	6	10	10	10	10	14	14	14	14	18	18	18	18	22	22	22	22	26	26	26	26
2.1m/2.7m Diagonal Brace	2	3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	22	23
1.8m/2.5m Toe board Set	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S1 Stabiliser	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
S2 Stabiliser																4	4	4	4	4	4	4	4	4

KGS	72	79	105	125	139	145	151	184	197	203	209	244	257	263	269	274	288	294	314	334	347	354	359
Total weight 1.8m																							
KGS	83	90	117	142	158	165	171	209	225	232	238	277	293	300	306	317	332	339	360	385	401	408	441
Total Weight 2.5M																							

Assembly Procedure

UTS 250 3T METHOD

ASSEMBLY AND DISMANTLING PROCEDURES:

When building a UTS 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 1 and 2 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.
- **Always start building with the smallest height frames at the base of the tower:**

Platform Height in Metres	Frame at Base
1.7, 2.2, 3.7, 4.2, 5.7, 6.2, 7.7, 8.2, 9.7, 10.2, 11.7, 12.2	4 Rung
2.7, 4.7, 6.7, 8.7, 10.7	6 Rung
1.2, 3.2, 5.2, 7.2, 9.2, 11.2	8 Rung

Where all 3 frame heights are used in a tower, start with a 4 rung frames at the base, with the 6 rung frames next and the 8 rung frames on the top. Refer to the Quantity Schedules for detail.

Assembly Procedure

UTS 250 3T METHOD

ASSEMBLY FOR 850 & 1450 TOWERS

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

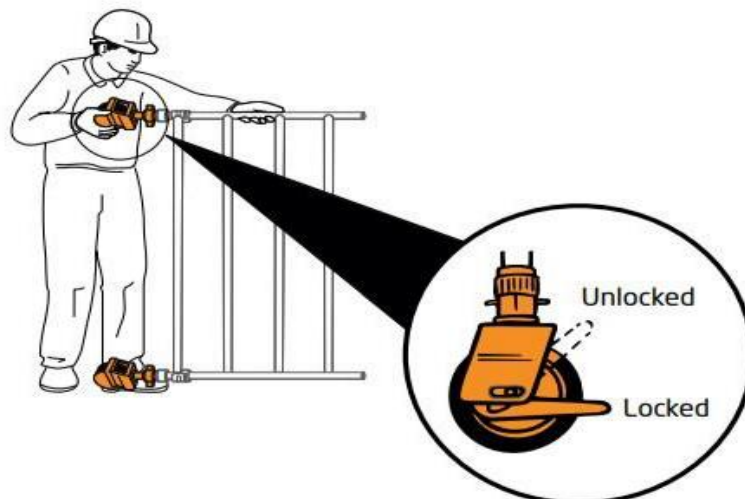
Always start building with the smallest height frames at the base of the tower:

Platform Height in Metres	Frame at Base
1.7, 2.2, 3.7, 4.2, 5.7, 6.2, 7.7, 8.2, 9.7, 10.2, 11.7, 12.2	4 Rung
2.7, 4.7, 6.7, 8.7, 10.7	6 Rung
1.2, 3.2, 5.2, 7.2, 9.2, 11.2	8 Rung

Where all 3 frame heights are used in a tower, start with 4 rung frames at the base, with the 6 rung frames next and the 8 rung frames on the top. Refer to the Quantity Schedules for detail. The procedure illustrated shows a 1450 tower starting with 4 rung frames and a platform height of 4.2m. If building an 850 tower, the following method can be used with single decks at all levels.

Assembly Procedure

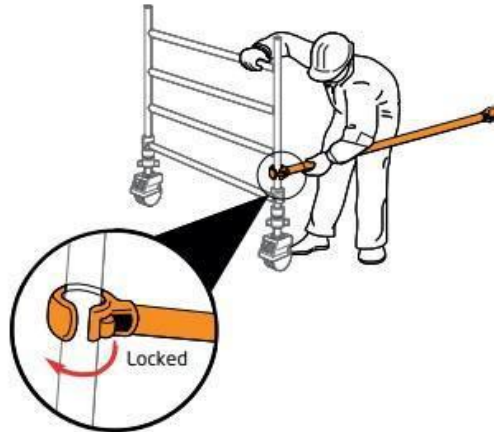
1. Push 4 castors into 4 adjustable legs. Adjust leg so that not more than 50mm of thread is visible below the nut. Insert adjustable legs into 2 end frames (one ladder and one span frame) as shown. Lock castor brakes. Base plates can be fitted to adjustable legs if it is not necessary to move the tower.



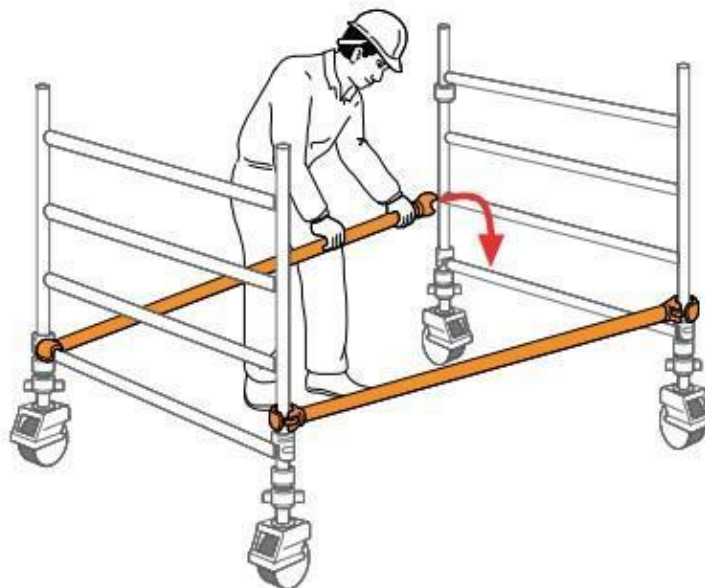
Assembly Procedure

2. Fit one horizontal brace (red) onto the vertical of an end frame, just above the bottom rung, with the claw facing outwards.

Note: Check all claws are primed (unlocked) before fitting.



2. Position the second end frame as shown and fit the other end of the horizontal brace on to the vertical, just above the bottom rung. Fit a second horizontal brace on the bottom rungs on the other side of the frames to square the tower.

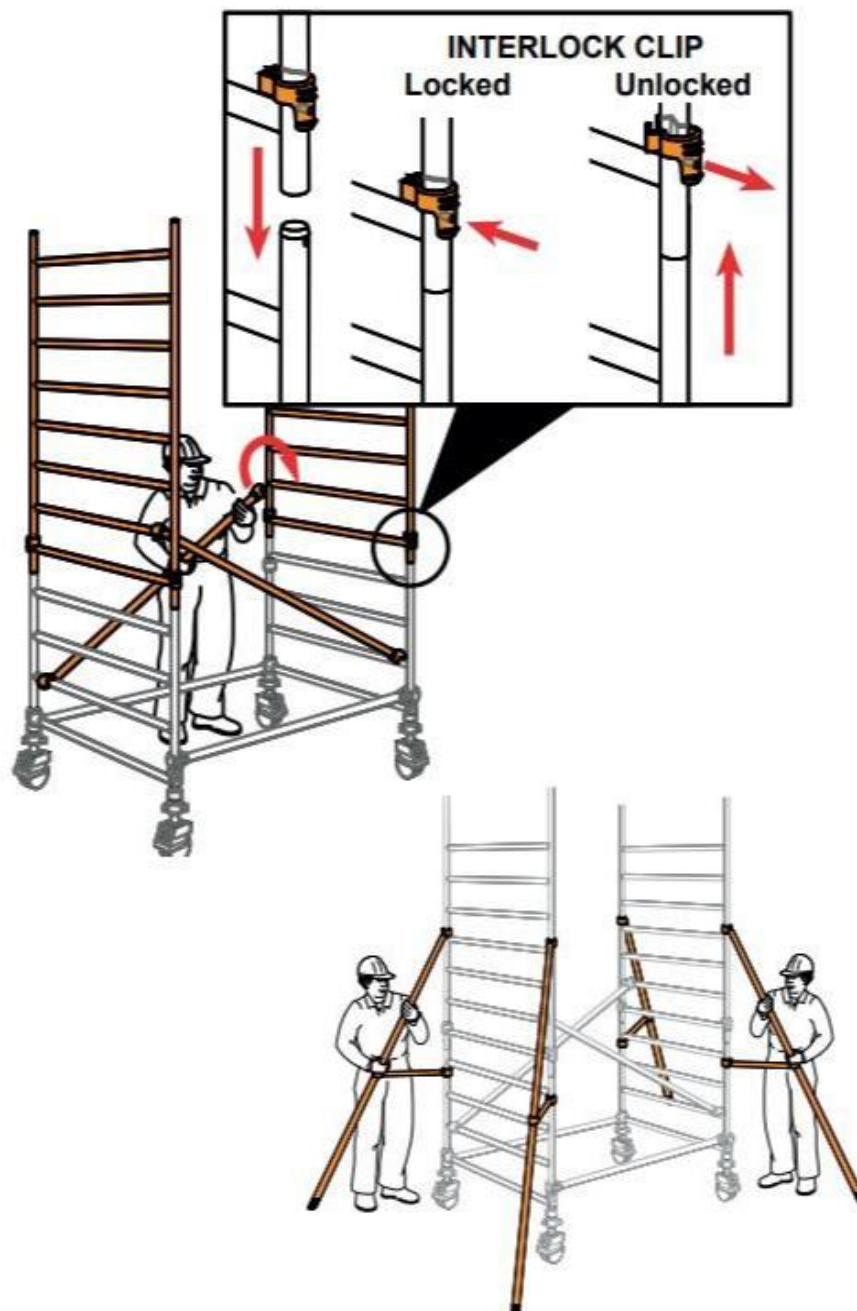


NOTE: Check all brace claws are positively locked after fitting

Assembly Procedure

4. Fit 2 additional end frames ensuring ladder sections line up and check the frame interlock clips are engaged. Fit 2 diagonal braces (blue) in opposing directions, from the 1st rung to the 6th rung on the opposing side. Diagonal braces should be positioned approx. 80mm inboard of the frame verticals. 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. Adjustable legs should only ever be extended to minimum amount required to level the tower.



Assembly Procedure

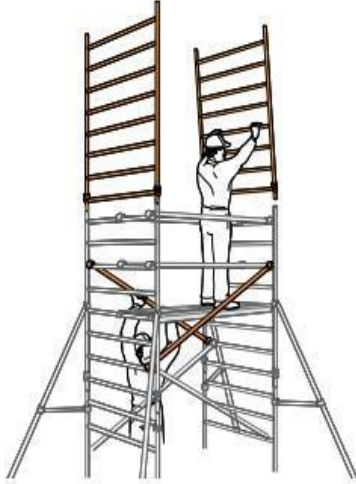
5. Fit a temporary deck on the lowest rungs. Fit a trapdoor deck on the 8th rung (2.0m) on one side of the tower. Ensure that the trapdoor is positioned with the hinges towards the outside of the tower as shown. Climb the end frame below the trapdoor on the inside of the tower, and from within the protected trapdoor position, fit horizontal braces on the 10th and 12th rungs (in that order) on both sides of the deck. Do not climb onto the deck until all guardrails are in place.

When horizontal braces are fitted as guardrails, they should be 0.5m and 1.0m (2 and 4 rungs) above the deck level. Remove the temporary deck from the lowest rung.



Assembly Procedure

- Fit the next pair of diagonal braces in opposing directions between the 6th and 10th rungs add two additional end frames.



- Add two more diagonal braces between the 10th and 14th rungs. If finishing at this height (4.2m platform), the fixed deck should be repositioned to the 16th rung on the opposite side of the tower to the trapdoor deck. Fit a trapdoor deck alongside it with the hinges towards the outside of the tower and the trapdoor in line with the one below. Climb the tower and from the protected trapdoor position, fit the horizontal braces as guardrails on both sides at 2 and 4 rungs (0.5 and 1.0m) above the platform level. At the final level, a further diagonal braces should be added on one side of the tower as shown.



Assembly Procedure

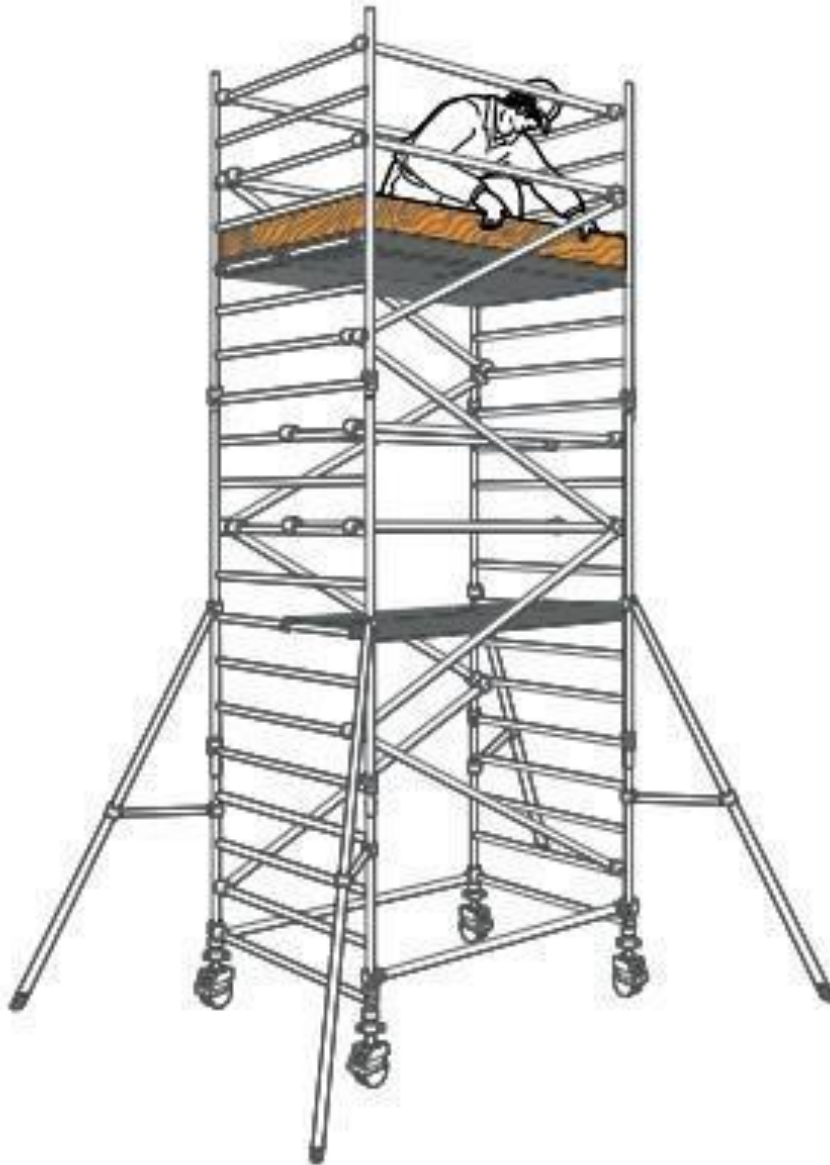
8. Continue to add pairs of end frames, diagonal braces and fit trapdoor decks as shown in the previous steps. At every platform level, add horizontal braces as guardrails at 2 and 4 rungs above the platform. Fit these guardrail braces from the protected trapdoor position. Do not climb onto the platform until all guardrails are in place.



Continue until the required height is reached. Re-position the fixed deck to the required platform height and fit a trapdoor deck alongside it as shown in Stage 7. Fit the guardrails as shown in Stage 7.

Assembly Procedure

9. Fit toe boards...



Dismantling Procedure

10. To take down the tower, reverse the building sequence. When removing guardrail braces, unlock the claws furthest from the trapdoor and then return immediately to the protected position within the trapdoor. You may then unlock the claws at the other ends of the guardrails to remove them from the tower.



Stabilisers and Outriggers

MOBLE TOWERS – 250 3T METHOD

STABILISERS

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

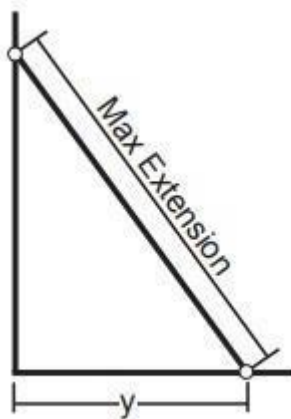
SP10 and SP15 telescopic stabilisers must always be fully extended.

Position the lower clamp so that the lower arm is as close to the horizontal as possible. Adjust the position of the top clamp to ensure the stabiliser foot is in firm 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
S1	1227
S2	2241

OUTRIGGERS

For information on mobile outriggers please consult your supplier.

RISK ASSESSMENT COMPLETION FORM

NO _____ DATE _____

Site & Location _____

Assessment carried out by: _____

Signed _____

MAIN ACTIVITY/SITUATION _____

NOTE _____

A - Personnel at Risk

Employee [E]
Contractor [C]
Public [F]

B - Severity

1 Negligible
2 Minor Injury
3 Serious Injury
4 Major Injury

C - Probability

1 Impossible
2 Improbable
3 Remote
4 Occasional

Probable [5]
Frequent [6]

NO	Activity/Location Materials/Tools etc	Hazards Identified	Risk Rating			Equipment to be used to minimise risk	Risk Rating			Action By
			A	B	C		B	C	(B x C)	

Risk values for: 1 - 4 = Acceptable; 5 - 9 = Medium - Investigate and where practicable reduce the risk; 10 - 14 = High - Action must be taken to reduce the risk; **15 - 24 = VERY HIGH - RISK IS TOO HIGH TO START WORK OR CONTINUE, WORK MUST BE STOPPED**

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