

STAIRCASE3T

Mobile Aluminium Tower
With Staircase
3T - Through the Trapdoor Method

XO TOWER USER GUIDE

Safety First

Mobile Towers - 3T Method

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 www.ymfg.co.in

XO 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 XO 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 9015964626, 9205586056 or email : sales@ymfg.co.in

Compliances

The XO Staircase aluminium system has been tested and certified to EN 1004: 2004 Class 3

CERTIFIED TO BRITISH STANDARDS

BS EN 1004:2004

User Guide 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 must not be used.

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- Check that all components are on site, undamaged and that they are functioning correctly (refer to Checklist and Quantity Schedules). Damaged or incorrect components must 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 275 kgs (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 using the Staircase 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.

- 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 device.

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Stabilisers / bassist

- Stabilisers or outriggers and ballast weights must always be fitted when specified.
- The Quantity Schedules show the recommended stabilisation. In circumstances where there is restricted ground clearance for stabilisers/outriggers, contact your supplier for advice. Ballast must be of 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

- The tower should only be moved by manual effort, and only from the base.
- When moving the tower, beware of live electrical apparatus, particularly overhead, 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 only 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).

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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 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

- Beware of open-ended buildings, which can cause a funnelling effect.
- Do not abuse equipment. Damaged or incorrect components must not be used.
- Raising and lowering components, tools, and/or materials by rope should be conducted within the lower 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 30 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.

Safety First

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 must 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 height.

- For further information on tying-in a tower please contact your supplier or the manufacturer.

M aintenance - 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.

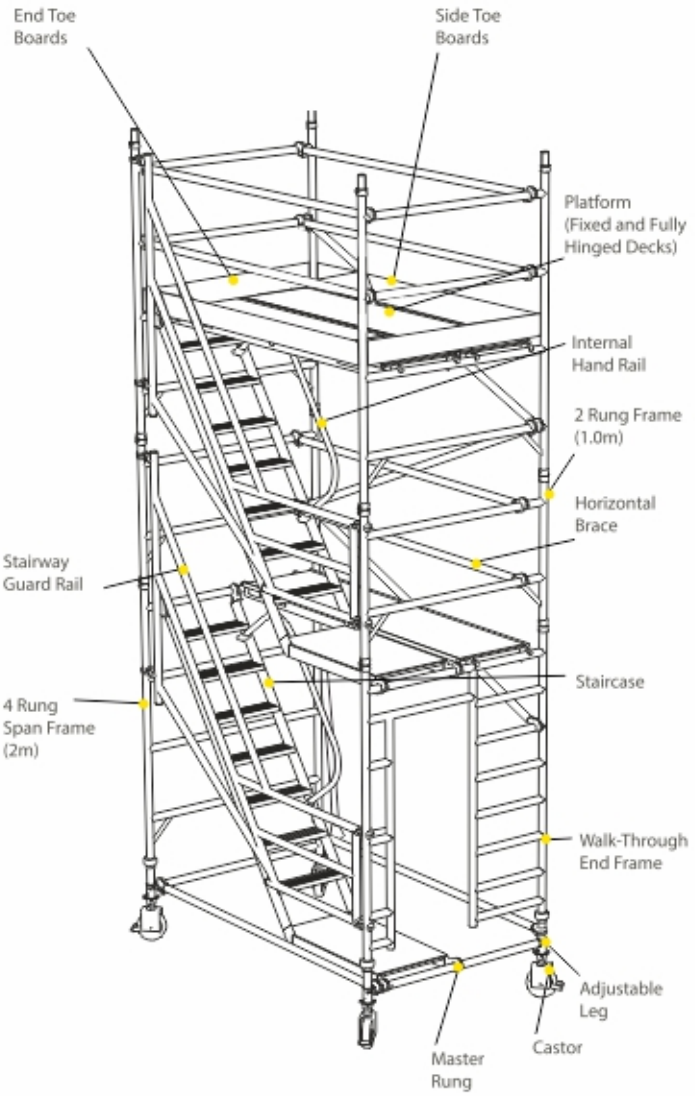
- Brace claws, frame interlock clips, trapdoor latches and platform wind-locks should be regularly checked to ensure they lock correctly.

- Refer to the XO user guide 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.

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Quantity Schedule

1450 width Staircase Tower

XO Clima 1450 to EN 1004:
Available in 2 lengths - 1.8m and 2.5m
Internal/external use - Towers under 2.5m are outside the scope of EN 1004

	3T build	Internal or external use				Internal use only	
Component	Working Height (m) Platform Height (m)	4.4 2.4	6.4 4.4	8.4 6.4	10.4 8.4	12.4 10.4	14.4 12.4
125mm/150mm/200mm 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
4 Rung Walk Through End Frame		1	1	1	1	1	1
4 Rung Span Frame (2.0m high x 1.45m wide)		1	3	5	7	9	11
Stairway Trapdoor Deck		1	1	1	1	1	1
Fixed Deck		1	2	3	4	5	6
Horizontal Brace		6	8	10	12	14	16
Diagonal Brace		1	3	5	7	9	11
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
Stairway Internal Hand Rail		1	2	3	4	5	6
Stairway Guard Rail		1	2	3	4	5	6
XO Stairway		1	2	3	4	5	6
SP7		4	4				
SP10				4		4	4
SP15					4		
Total Self-Weight of Tower (kg) - 1.8m		155	219	295	373	422	486
Total Self-Weight of Tower (kg) - 2.5m		173	245	330	416	474	545

Quantity Schedule

1450 width Staircase Tower

BoSS Ladderspan 1450 to EN 1004:
Available in 2 lengths - 1.8m and 2.5m
Internal/External use - Towers under 2.5m are outside the scope of EN 1004

3T build	Internal or external use				Internal use only	
Component / Working Height (m) / Platform Height (m)	4.4 / 2.4	6.4 / 4.4	8.4 / 6.4	10.4 / 8.4	12.4 / 10.4	14.4 / 12.4
125mm/150mm/200mm 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
4 Rung Walk Through End Frame	1	1	1	1	1	1
4 Rung Span Frame (2.0m high x 1.45m wide)	1	3	5	7	9	11
Stairway Trapdoor Deck	1	1	1	1	1	1
Fixed Deck	1	2	3	4	5	6
Horizontal Brace	6	8	10	12	14	16
Diagonal Brace	1	3	5	7	9	11
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
Stairway Internal Hand Rail	1	2	3	4	5	6
Stairway Guard Rail	1	2	3	4	5	6
XO Stairway	1	2	3	4	5	6
SP7	4	4				
SP10			4		4	4
SP15				4		
Total Self-Weight of Tower (kg) - 1.8m	155	219	295	373	422	486
Total Self-Weight of Tower (kg) - 2.5m	173	245	330	416	474	545

Quantity Schedule

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 Clima staircase tower built using the 3T method with a 4.4m platform height and a platform length of 1.8m has a self weight of 228kg.
950kg - 228kg = **722kg maximum safe working load**
total weight self weight **(users, tools and materials)**

Example 2:
A Span frame staircase tower built using the 3T method with a 10.4m platform height and a platform length of 2.5m has a self weight of 474kg.
950kg - 474kg = **476kg maximum safe working load**
total weight self weight **(users, tools and materials)**

For greater heights and loads, consult the manufacturer for guidance.

Platform loading

On a 1450 tower a platform may comprise of a single 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 either one deck, or two decks placed side by side.

The quantities on pages 7 and 8, will enable BoSS towers to be built safely and therefore comply with the requirements of the Work at Height Regulations. They include double guardrails to all platforms, and toe boards will need to be added if any levels are used as working platforms and for storage of materials. EN 1004 requires platforms at least every 4.2m, and these measures will exceed that requirement.

Quantity Schedule

Ballast: internal/external use

There is no requirement for ballast on staircase towers if using stabilisers as detailed in the tab*les on pages 7 and 8.*

Mobile outriggers

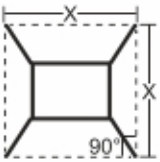
MP16 outriggers can be used instead of SP15 stabilisers, as detailed below. Mobile outrigger kits comprise:

Mobile outrigger kit	
MP16 Mobile Outrigger	4
125/150/200mm Castor (Use same diameter castors as on tower)	4
250mm Adjustable leg	4
Plan Braces	4
The above components replace: SP15 Stabiliser	4
SP15 Stabiliser	4

Stabilisers

To improve rigidity, larger stabilisers can be used at a lower level than shown in the tables on pages 7 and 8.

Angle of stabiliser 1450 tower



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

Stabiliser feet should form a square as shown in the diagram and table above.

Assembly Procedure

Mobile Towers - 3T Method

Assembly and dismantling procedures

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 1 and 2 rungs (0.5m and 1.0m) above platforms.
- Never stand on an unguarded platform positioned 1m above the ground. If your risk assessment shows it necessary, you may also need to guardrail platforms at this level.

Platform height in metres
2.4, 4.4, 6.4, 8.4, 10.4, 12.4

To dismantle a XO Staircase tower

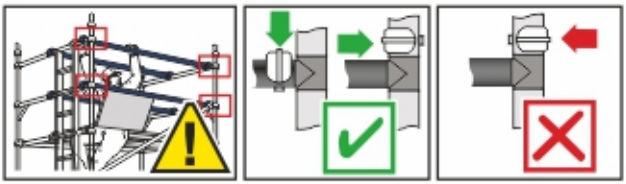
- Remove toe boards, and pass down the tower.
- Unclip farthest end of braces and immediately go to protected trapdoor position on ladder to complete removal.
- Remove upper platforms from protected platform levels below.
- Pass removed components out of the tower to a colleague.

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	✔
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.

Assembly Procedure

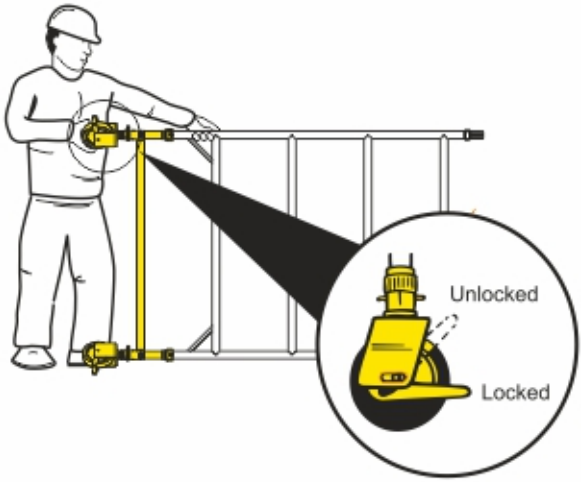
Mobile Towers - 3T Method

The procedure illustrated shows 4.4m platform height tower.

The manufacturer recommends two persons are used to build XO Staircase tower. Only climb the tower from the inside.

1 Fit master rung to 4 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.

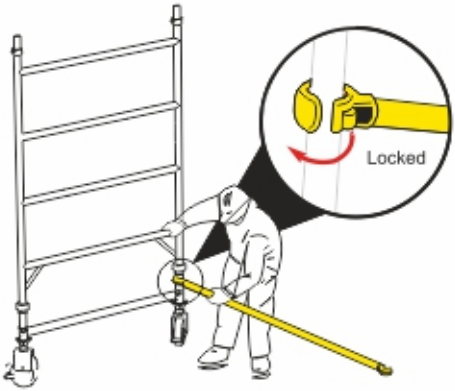
NB: If you do not require direct access onto the stair case use one 2.0m 4 rung frame in lieu of the walk through frame.



Assembly Procedure

2 Fit one horizontal brace (red) onto the vertical of the master rung just above the bottom casting, with the claw facing outwards. The frame will now be self-supporting.

Note: All locking claws must be opened before fitting.



3 Position the walk through frame as shown and fit the other end of the horizontal brace onto the master rung vertical, just above the bottom casting.

Fit a second horizontal brace between the master rung horizontals on the other side of the frames, to square the tower.



Assembly Procedure

4 Position a temporary deck next to the diagonal brace. Fit the stairway 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.

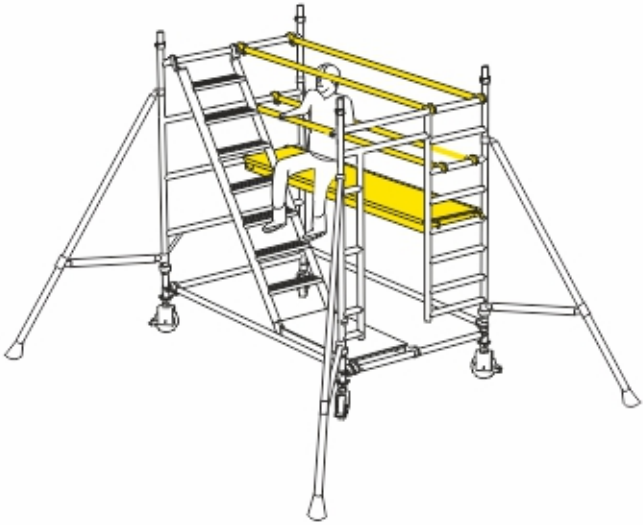
Ensure the frames are vertical and level by checking with a spirit level and setting the adjustable legs as required. Fit stabilisers (see note on page 23).

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



Assembly Procedure

5 Reposition the temporary deck to the 3rd cross member (counting at the span frame end). Sit on the platform and fit a pair of horizontal guardrails to the 4th and 5th cross members. Climb onto the guardrailed platform.



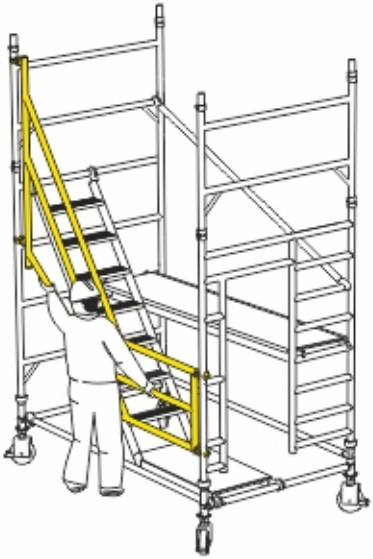
6 Standing on the fully guardrailed platform, fit a 2 rung (1.0m) span frame to each end of the tower. Fit a diagonal brace between the 4th and 6th rungs (counting at the span frame end) as shown.



Assembly Procedure

7 Sitting on the platform remove the guardrails (e.g. the reverse of steps 4 - 5).

Fit the Stairway Guardrail to the front of the tower on the end frame vertical tubes.



8 Standing on the stairway, at a height below 1m, reposition the fixed deck to the 5th horizontals (counting at the span frame end). Fit the internal handrail to the stairway. Sitting on the platform, position four horizontal guardrails in line with the edge of the platform on the 6th & 7th cross members, as shown.



Assembly Procedure

Fit the stabilisers (see notes on page 23).



9 Standing on the fully guardrailed platform, fit a 4 rung (2.0m) span frame at either end of the tower. Fit two diagonal braces in opposing directions, between the 6th and 8th cross members and the 8th and 10th cross members (counting from the span frame end), as shown.



Assembly Procedure

10 Standing on the fully guardrailed platform, fit the stairway guard rail to the front of the tower. The lower claws fit above and below the cross members of the 2 rung (1.0m) span frame, as shown. 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.



11 Standing on the fully guard railed platform, fit a staircase trapdoor deck above the stairway on the 9th cross member (counting from the span frame end). Place a fixed deck next to the trapdoor deck.



12 Climb the stairway through the trapdoor deck. Sit on the fixed deck with your legs passing through the trapdoor deck. Check that the two upper claws of the stairway guardrail are locked onto the end frame vertical. Remain sitting on the fixed deck and fit guardrails to the 10th and 11th cross members on either side of the tower.

DO NOT CLIMB ONTO A PLATFORM UNTIL ALL GUARDRAILS ARE IN PLACE.



Assembly Procedure

13 Fit toe boards (see instructions on page 22).
The tower is now complete.

When building beyond 4.4m platform height:

Continue to add end frames, diagonal braces, stairways and stairway guardrails as shown in the previous steps. Add guardrails at 0.5m and 1.0m (in that order), above the platform.

DO NOT CLIMB ONTO A PLATFORM UNTIL ALL GUARDRAILS ARE IN PLACE.

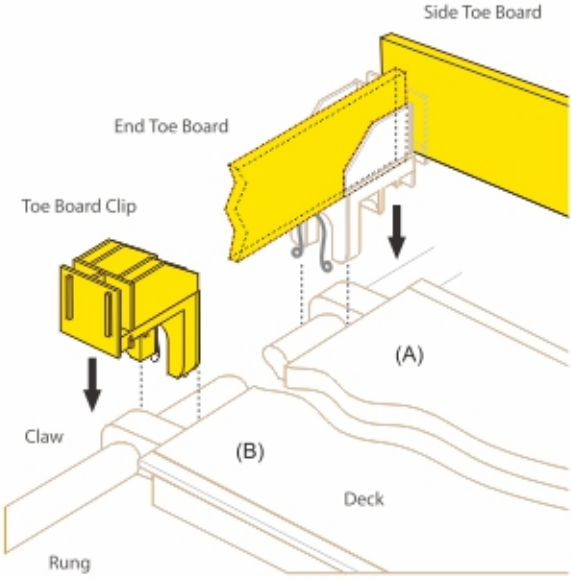


Dismantling Procedure

To take down the tower reverse the building sequence.
When removing guardrail braces, unlock the four 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.



Lock yellow plastic toe board clips over rung and deck claw as shown. Position as (A) on right hand deck claw. On other side of the working platform, position the clip as (B). Place 25mm thick toe boards into slots in toe board clips as shown.



Stabilisers and Outriggers

Mobile Towers - 3T Method

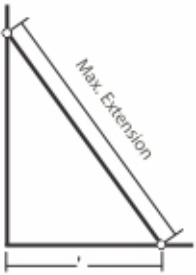
Attach one stabiliser to each corner of the tower as shown. Ensure stabiliser feet are equally spaced to form a square.

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
SP7	1227
SP10	2241
SP15	2757

Outriggers

For information on mobile outriggers please consult your supplier.

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

Y-Access Manufacturing Pvt. Ltd.

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Uttar Pradesh, India - 201310

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