

# LEWIS

TOWER SYSTEMS



## Advanced Guard Rail (AGR) Tower

Product Information and Assembly Guide



Design excellence,  
aesthetic quality, overall  
form, reliability, precision  
detailing, integrity of  
materials, and value for  
money

LEWIS Access has a  
wealth of experience and  
technical expertise which  
provides a full technical  
support service for all  
clients

## Product information

# LEWIS

TOWER SYSTEMS

### Introduction

The LEWIS (AGR) is a one-piece guardrail which is integral to the build of a mobile tower, making it impossible for the user to build the tower without the guardrail in place.

The LEWIS AGR Frame replaces numerous braces used in the traditional build Method, so improves the speed of erection and reduces the number of components required.

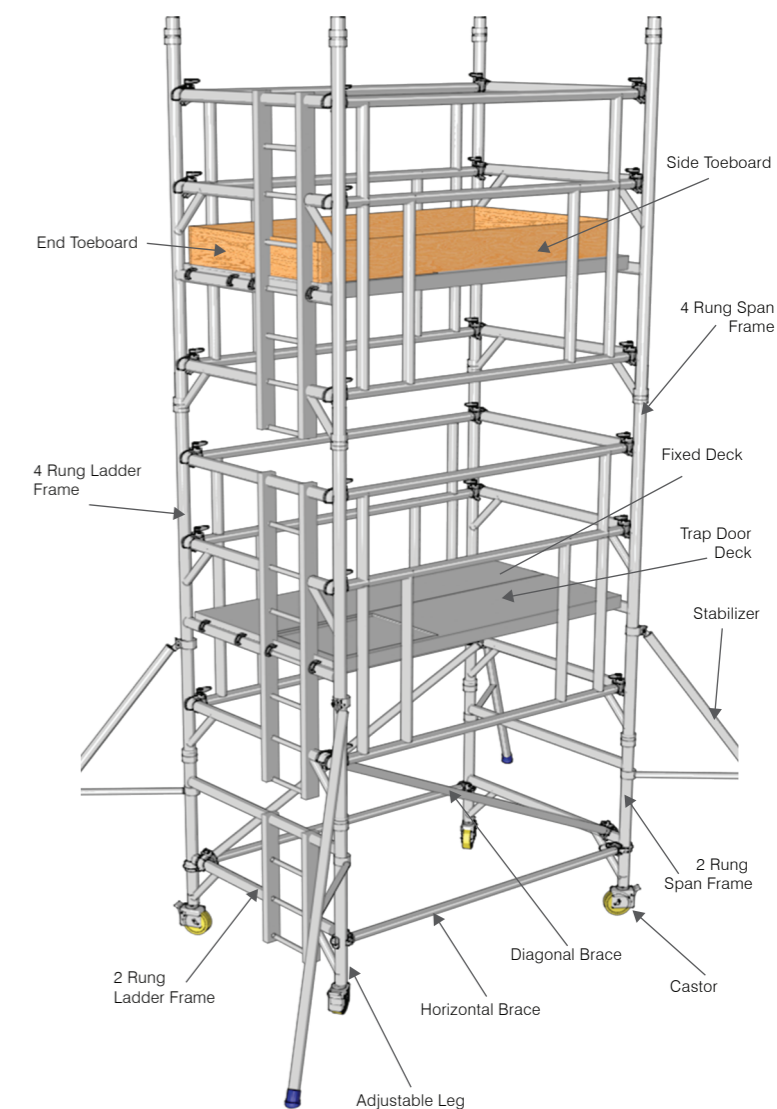
The specially designed guardrail units can be used in conjunction with our standard Single and Double Width Towers.

Unique Features Include:

- Fewer components than braced towers reducing losses on site
- Faster assembly
- Ergonomic easy to use design
- Correct Guardrail heights achieved every time
- Collective protection before the operative accesses the platform

### Checklist

- Ensure all brace hooks 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 windlocks on
- Toeboards located
- Check guardrails are fitted correctly. See illustration



## Quantity Schedule

### 1450mm Width Towers

#### 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 weightless the self weight of the tower.

The total weight for the towers shown in the schedule is 950kg.

#### Example 1:

A 1450 ladder span tower built using the AGR method with a 4.2m platform height and a platform length of 1.8m has a self weight of 197kg.

950kg total weight - 197kg self weight = 755kg maximum safe working load (users, tools and materials).

### 1450mm Double Width Towers Ballast

Internal/External Use.

There is no requirement for ballast on 1450 towers if using stabilisers as detailed in the table on page 10.

### 850mm Single Towers

#### 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 Ladder span tower built using the AGR method with a 4.2m platform height and a platform length of 1.8m has a self weight of 160kg. 950kg total weight — 159kg self weight = 792kg maximum safe working load (users, tools and materials).

### 850mm Single Towers Ballast

Internal/External Use.

There is no requirement for ballast on 850 towers if using stabilisers as detailed in the table on page 10.

## Platform Loading

On a 1450 Double AGR 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.

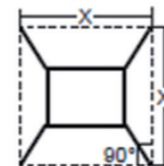
On an 850 Single tower a platform comprises of a single deck only.

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.

## Stabilisers

To improve stability, larger stabilisers can be used at a lower level than shown in the table on page 9.

Angle of Stabiliser 1450 Double & 850 Single



### 1450 Double

	Platform Length 1.8m	Platform Length 2.5m
Standard Stabilisers	X-3351	X-3629
Jumbo Stabilisers	X-4790	X-5100

### 850 Single

	Platform Length 1.8m	Platform Length 2.5m
Standard Stabilisers	X-2990	X-3200
Jumbo Stabilisers	X-4465	X-4740

## Double Width 1450mm Advanced Guard Rail

Working Height in (m)	4.2	4.7	5.7	5.2	6.7	7.7	8.2	8.7	9.7	10.2	10.7	11.7	12.2	12.7	13.7	14.2
Working Height in (m)	2.2	2.7	3.7	4.2	4.7	5.7	6.2	6.7	7.7	8.2	8.7	9.7	10.2	10.7	11.7	12.2
150mm Castor	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Adjustable Leg 500mm	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2 rung Ladder Frame (1.0m high x 1.45m wide)	1		1	1		1	1		1	1		1	1		1	1
2 rung Span Frame (1.0m high x 1.45m Wide)	1	1	1	1		1	1		1	1		1	1		1	1
3 rung Ladder Frame (1.5m high X 1.45m Wide)		1	1		1	1			1	1			1	1		
3 rung Span Frame (1.5m high x 1.45m Wide)		1	1		1	1			1	1			1	1		
4 rung Ladder Frame (2.0m high x 1.45m Wide)	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6
4 rung Span Frame (2.0m high x 1.45m Wide)	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6
1.8m / 2.5m Trapdoor Deck	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6	6
1.8m / 2.5m Fixed Deck	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1.8 m / 2.5m Horizontal Brace	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2.1 m / 2.7m Diagonal Brace	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1.8m / 25mm Side Toe Board (Wood)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1.2m End Toe Board (Wood)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Toe Board Clip	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
1.8m / 2.5m AGR Frames	2	2	4	4	4	6	6	6	8	8	8	10	10	10	12	12
Standard Stabilisers		4	4	4	4											
Jumbo Stabilisers						4	4	4	4	4	4	4	4	4	4	4
Total Self Weight of Tower (Kg) -1.8m		152	193	197	215	255	272	290	330	335	352	393	397	415	455	460
Total Self Weight of Tower (Kg) -2.5m	151	174	222	227	249	297	314	337	385	390	412	460	465	488	535	540

## Double Width 850mm Advanced Guard Rail

Working Height in (m)	4.2	4.7	5.7	5.2	6.7	7.7	8.2	8.7	9.7	10.2	10.7	11.7	12.2	12.7	13.7	14.2
Working Height in (m)	2.2	2.7	3.7	4.2	4.7	5.7	6.2	6.7	7.7	8.2	8.7	9.7	10.2	10.7	11.7	12.2
150mm Castor	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Adjustable Leg 500mm	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2 rung Ladder Frame (1.0m high x 1.45m wide)	1		1	1		1	1		1	1		1	1		1	1
2 rung Span Frame (1.0m high x 1.45m Wide)	1		1	1		1	1		1	1		1	1		1	1
3 rung Ladder Frame (1.5m high X 1.45m Wide)		1	1		1	1			1	1			1	1		
3 rung Span Frame (1.5m high x 1.45m Wide)		1	1		1	1			1	1			1	1		
4 rung Ladder Frame (2.0m high x 1.45m Wide)	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6
4 rung Span Frame (2.0m high x 1.45m Wide)	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6
1.8m / 2.5m Trapdoor Deck	1	2	2	2	3	3	3	4	4	4	5	5	5	6	6	6
1.8m / 2.5m Fixed Deck																
1.8 m / 2.5m Horizontal Brace	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2.1 m / 2.7m Diagonal Brace	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1.8m / 25mm Side Toe Board (Wood)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1.2m End Toe Board (Wood)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Toe Board Clip	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
1.8m / 2.5m AGR Frames	2	2	4	4	4	6	6	6	8	8	8	10	10	10	12	12
Standard Stabilisers		4	4	4	4											
Jumbo Stabilisers					4	4	4	4	4	4	4	4	4	4	4	4
Total Self Weight of Tower (Kg) -1.8m	114	132	158	160	178	214	218	236	260	279	282	306	310	328	352	356
Total Self Weight of Tower (Kg) -2.5m	125	148	175	179	201	241	245	267	294	312	321	348	351	372	401	405

## The AGR Method

### Assembly and dismantling procedures

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 guard rail platforms at this level. Always start building with the smallest height frames at the base of the tower.
- Always start building with the smallest height frames at the base of the tower.

Platform heights in metres	Frame at base	1st Deck	1st AGR
2.2, 4.2, 6.2, 8.2, 10.2, 12.2	2 Rung	4th Rung	3rd Rung
2.7, 4.7, 6.7, 8.7, 10.7	3 Rung	1st Rung	4th Rung
3.7, 5.7, 7.7, 9.7, 11.7	2+3 Rung	3rd Rung	2nd Rung

### Assembly for 850 and 1450 Towers

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

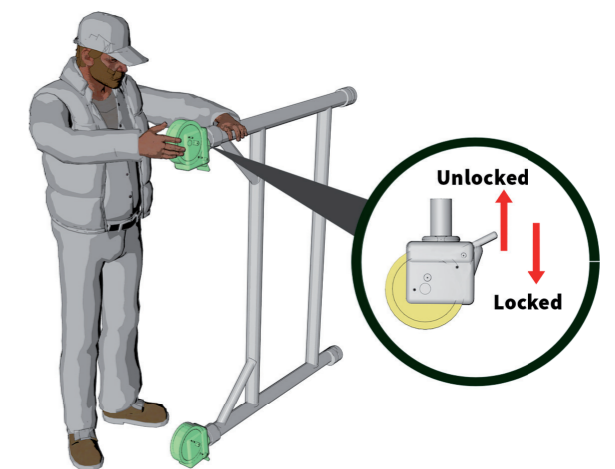
Platform heights in metres	Frame at base	1st Deck	1st AGR
2.2, 4.2, 6.2, 8.2, 10.2, 12.2	2 Rung	4th Rung	3rd Rung
2.7, 4.7, 6.7, 8.7, 10.7	3 Rung	1st Rung	4th Rung
3.7, 5.7, 7.7, 9.7, 11.7	2+3 Rung	3rd Rung	2nd Rung

Where all 3 frame heights are used in a tower, start with 2 rung frames at the base, with the 3 rung frames next and the 4 rung frames on the top.

Refer to the Quantity Schedules for detail. The procedure illustrated shows a 1450 tower starting with 2 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.

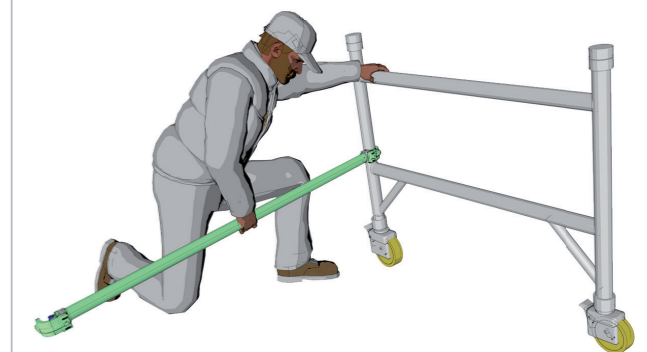
### Step 1

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's not necessary to move the tower.



### Step 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.

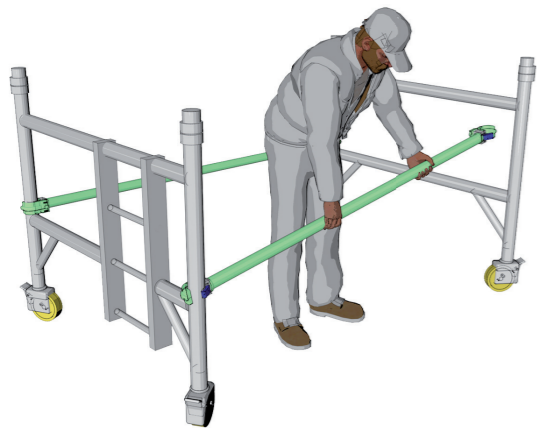


## The AGR Method

### Step 3

Position the second end frame as shown and fit the other end of the horizontal brace onto 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.*

### Step 4

Fit additional end frames ensuring ladder sections line up and check the frame interlock clips are engaged.

Fit 2 diagonal braces in opposing directions, from the 1st rung to the 3rd 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.



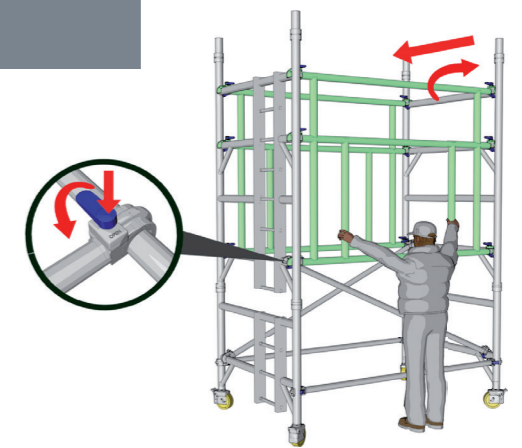
**IMPORTANT-** Only use the adjustable legs to level the tower and not to gain extra height. Adjustable legs should only ever be extended to minimum amount required to level the tower.

## The AGR Method

### Step 5

Fit the advanced guard rail frame on each side of the tower. The bottom of the AGR frame must be fitted to the 4th rung of the scaffold tower (as shown in the image below).

The AGR should be placed up against the end frame verticals. Secure the frames by pushing down the handle, and turning. It will be securely in place, and the handle will not be able to be moved.



### Step 6

Fit the Stabilisers if building higher - or on single width (850mm) towers. If required, fit a temporary deck on the lowest rungs of the tower.

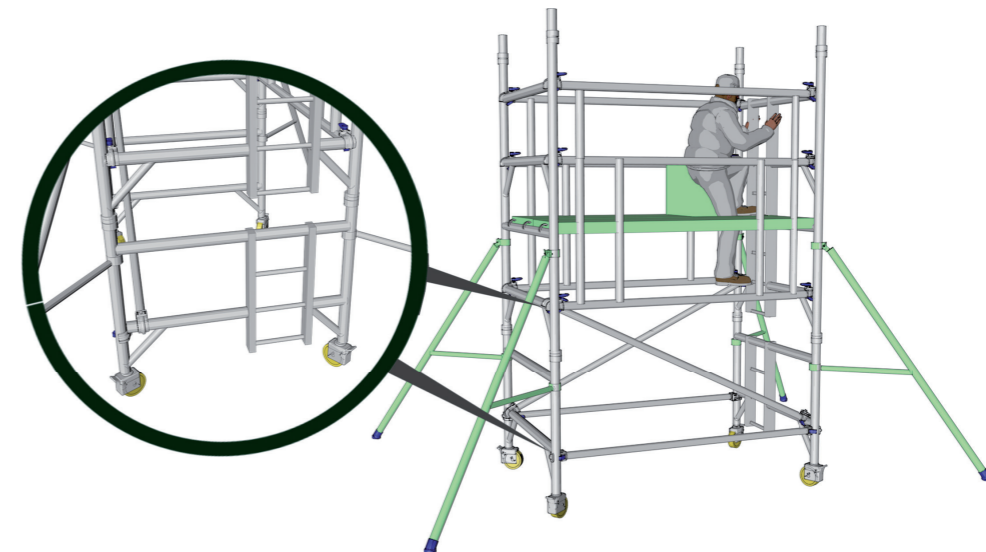
Fit a trapdoor deck on the 4th rung with trapdoor adjacent to the ladder. Ensure the trapdoor is positioned with the hinges towards the outside of the tower as shown.

Fit a fixed deck next to the trapdoor deck on the 4th rung. (If fitted, remove the temporary dock from the lowest rungs)

**The platform is now complete.**

Always climb the ladder below the trapdoor and always on the inside of the tower.

If clear access to the ladder is required, braces may be re-positioned as shown. Reposition braces to original location before moving tower.



## The AGR Method

### Step 7

Fit two additional end frames, ensuring the ladder sections line up. Check interlock clips are engaged.



### Step 8

Fit two more advanced guard rail frames to those frames, with the brace hook on the 10th rungs, secure the AGR's in place as in step 5. Fit a trapdoor deck on the 8th rung, with the trapdoor in line with the one below.

Place a fixed deck on the 8th rung next to the trapdoor deck. The tower now has a platform height of 4.2m.

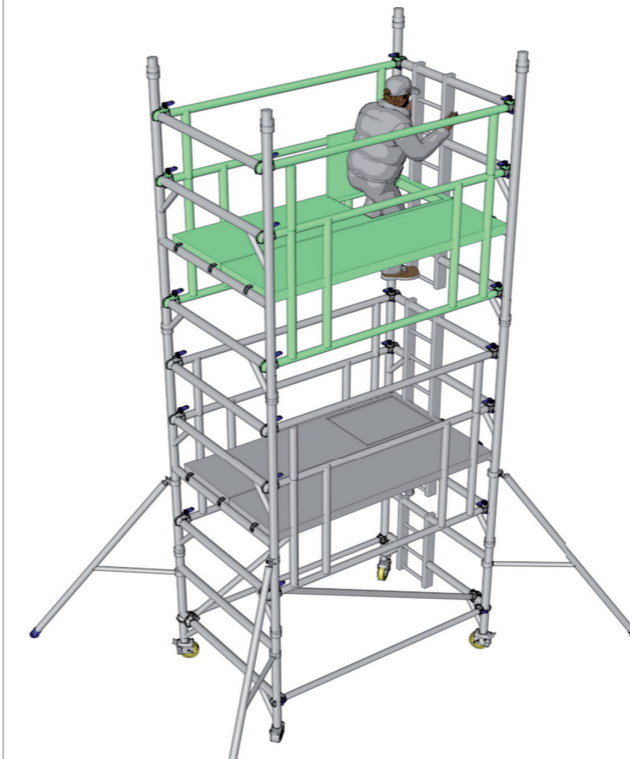
If finishing at this height, move on to step 10. If greater platform height is required, repeat steps 7 and 8 until desired height is achieved.



## The AGR Method

### Step 9

Fit two additional end frames, ensuring the ladder sections line up. Check interlock clips are engaged.

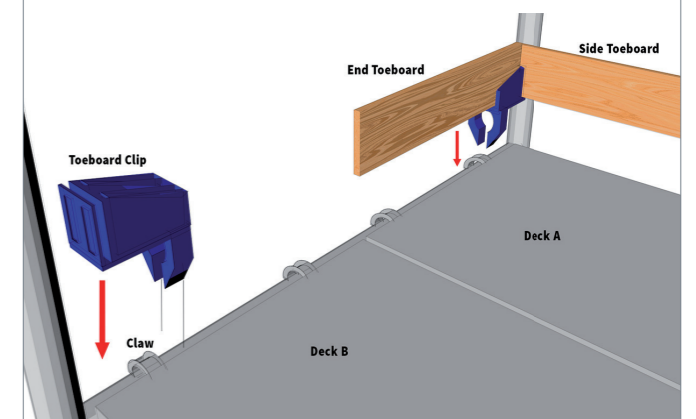


### Step 10

#### FITTING TOE BOARDS

Lock blue plastic toeboard clips to rung and platform claw as shown.

Place 25mm thick toeboards into slots in toe board clips as shown



Now the Tower is complete!



## Dismantling Procedure

To dismantle the tower reverse the building sequence, i.e. remove decks, then AGR's, then end frames - always from the safety of the platform below.



## Stabilisers and Outriggers Mobile Towers - AGR Method

### Stabilisers

Attach One stabilizer to each corner of the tower as shown.  
Ensure Stabilisers feet are equally spaced to form a square.  
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 stabilizer 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 camps to lift the four stabilizer feet a maximum of 25mm off the ground and then unlock the castor brakes.  
After moving ensure all four stabilizer feet are repositioned in firm contact with the ground.

### Stabiliser Dimensions



	Y
Standard Stabilisers	1230
Jumbo Stabilisers	2250

### Outriggers

For information on mobile outriggers please consult your supplier.

## Further Information

For further information and support please contact us on:

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