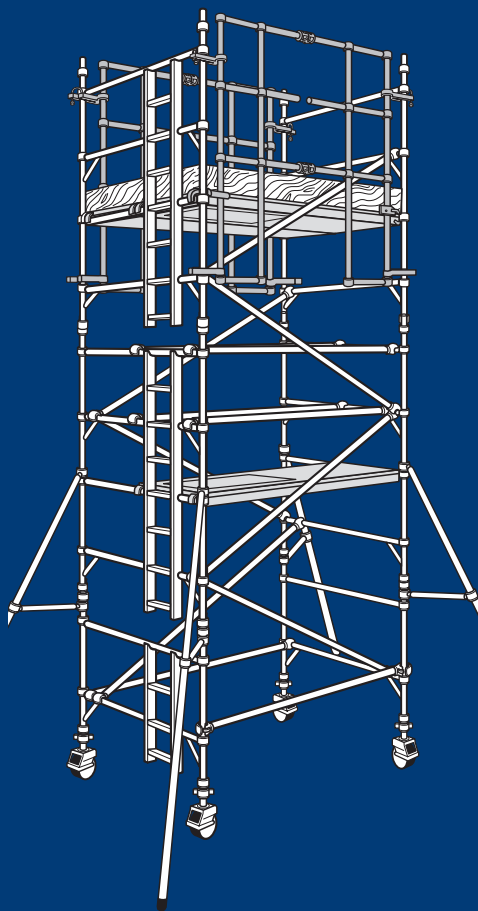


BOSS MOBILE
ALUMINIUM TOWER
1450/850 LADDERSPAN
USER GUIDE

YOUNGMAN
www.youngmangroup.com



**3T - THROUGH THE TRAPDOOR
METHOD AND BOSS ADVANCED
GUARDRAIL SYSTEM**

December 2005

BOSS 1450/850 Ladderspan User Guide

Introduction

Please read this guide carefully.

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.

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 or the BOSS Advanced Guardrail System.

The law requires that personnel erecting towers must be competent and qualified to do so. Any person erecting an Youngman BOSS mobile tower should have a copy of this guide. For full information on the use of mobile access and working towers consult the PASMA guide or EN1298.

If you need further information, design advice, additional guides or any other help with this product, please contact Youngman on 08700 130360 or email

youngmansales@youngmangroup.com

Compliances

The BOSS aluminium system has been tested and certified to BS 1139: Part 3: 1994 (HD1004) and DIN 4422 8/92, as well as receiving national approvals in Switzerland, Sweden, Norway and the Czech Republic. It also confirms to US standard ANSI 1988.

Preparation and Inspection

Inspect the equipment before use to ensure that it is not damaged and that it functions properly.

Safety

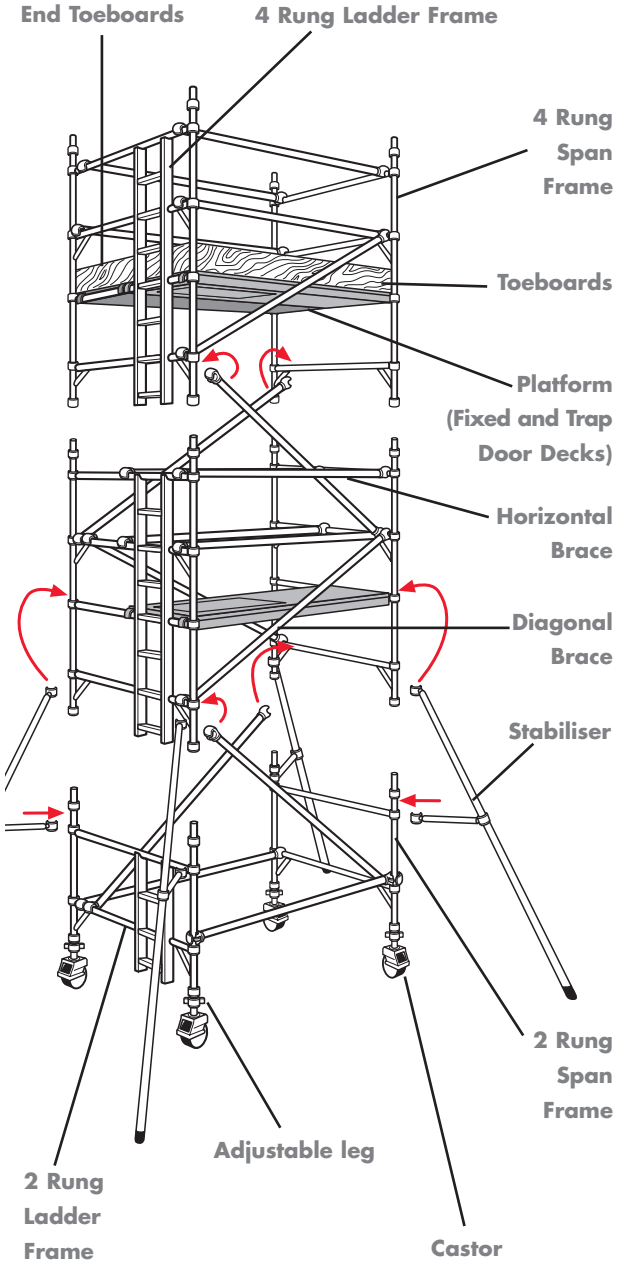
Refer to Usage Advice.



DIN 4422 8/92:
HD 1004-3 8/12



Components - 3T Method



Quantity Schedule - 1450 3T Method

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 tower built using the 3T method with a 4.2m platform height and a platform length of 1.8m has a self weight of 175kg.

$$\begin{array}{rcl} 950\text{kg} & - & 175\text{kg} = \mathbf{775\text{kg maximum safe working load}} \\ \text{total weight} & & \text{self weight} \quad \quad \quad \text{(users, tools and materials)} \end{array}$$

Example 2:

A 1450 tower built using the 3T method with a 11.7m platform height and a platform length of 2.5m has a self weight of 436kg.

$$\begin{array}{rcl} 950\text{kg} & - & 436\text{kg} = \mathbf{514\text{kg maximum safe working load}} \\ \text{total weight} & & \text{self weight} \quad \quad \quad \text{(users, tools and materials)} \end{array}$$

For greater heights and loads, consult Youngman 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 page 3 will enable BOSS towers to be built safely and therefore comply with the requirements of the Work at Height Regulations 2005. They include double guardrails to all platforms, and toeboards will need to be added if any levels are used as working platforms and for storage of materials. BS1139 requires platforms at least every 4m, and these measures will exceed that requirement.

Ballast: Internal/External use

There is no requirement for ballast on 1450 towers if using stabilisers as detailed in the table on page 3.

Mobile Outriggers

MP7 mobile outriggers can be used instead of SP7 and SP10 stabilisers, as detailed below. MP7 mobile outrigger kits comprise:

MP7 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:

SP7/SP10 STABILISER	4
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Stabilisers

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

Quantity Schedule - 850 3T Method

BOSS 850 Ladderspan to HD1004: Available in 2 lengths - 1.8m and 2.5m

Internal/External Use

Description	Working Height		3.7m		4.2m		4.7m		5.2m		5.7m		6.2m		6.7m		7.2m		7.7m		8.2m		8.7m		9.2m		9.7m		10.2m													
	1.2m	1.7m	1.2m	1.7m	2.2m	2.7m	2.7m	3.2m	3.2m	3.7m	4.2m	4.2m	4.7m	4.7m	5.2m	5.2m	5.7m	5.7m	6.2m	6.2m	6.7m	6.7m	7.2m	7.2m	7.7m	7.7m	8.2m	8.2m	8.7m	8.7m	9.2m	9.2m	9.7m	9.7m	10.2m	10.2m						
125/150/200mm 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	4	4	4	4	4	4	4	4	4	4	4	4	4	4				
250mm 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	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
850 2 Rung Ladder Frame	1	1			1	1																																				
850 2 Rung Span Frame	1	1			1	1																																				
850 3 Rung Ladder Frame	1	1			1	1																																				
850 3 Rung Span Frame	1	1			1	1																																				
850 4 Rung Ladder Frame	1	1	1	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1		
850 4 Rung Span Frame	1	1	1	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1		
1.8m and 2.5m Trap Door Deck	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
1.8m and 2.5m Horizontal Brace (red)	6	6	6	6	10	10	10	10	10	10	10	10	10	10	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14		
2.1m and 2.7m Diagonal Brace (blue)	2	3	3	4	5	6	7	8	9	10	11	12	13	14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
1.8m and 2.5m Side Toeboard	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
0.6m End Toeboard	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Toeboard Holder	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4			

Internal Use only

10.7m	11.2m	11.7m	12.2m	12.7m	13.2m	13.7m	14.2m
8.7m	9.2m	9.7m	10.2m	10.7m	11.2m	11.7m	12.2m
4	4	4	4	4	4	4	4
4	4	4	4	4	4	4	4
		1	1			1	1
		1	1			1	1
1		1		1		1	
1		1		1		1	
4	5	4	5	5	6	5	6
4	5	4	5	5	6	5	6
5	5	5	5	6	6	6	6
18	22	22	22	22	26	26	26
16	17	18	19	20	21	22	23
2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2
4	4	4	4	4	4	4	4

4	4	4	4	4	4	4	4

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276	289	296	316	336	349	356	362
318	334	341	362	387	403	410	416

SP7 Fixed stabiliser																																								
SP10 Telescopic Stabiliser																																								
SP15 Telescopic Stabiliser																																								

Ballast required (kgs) 2.5m																																							
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Total Tower self-weight (kgs) 1.8m	72	79	106	126	139	146	151	185	198	204	210	245	258	265	270
Total Tower self-weight (kgs) 2.5m	84	90	117	143	158	165	172	210	251	283	314	279	294	301	307

Quantity Schedule - 850 3T Method

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 tower built using the 3T method with a 4.2m platform height and a platform length of 1.8m has a self weight of 151kg.

$$\begin{array}{rcl} 950\text{kg} & - & 151\text{kg} = \mathbf{799\text{kg maximum safe working load}} \\ \text{total weight} & & \text{self weight} \quad \quad \quad \mathbf{(\text{users, tools and materials})} \end{array}$$

Example 2:

An 850 tower built using the 3T method with a 11.7m platform height and a platform length of 2.5m has a self weight of 410kg.

$$\begin{array}{rcl} 950\text{kg} & - & 410\text{kg} = \mathbf{540\text{kg maximum safe working load}} \\ \text{total weight} & & \text{self weight} \quad \quad \quad \mathbf{(\text{users, tools and materials})} \end{array}$$

For greater heights and loads, consult Youngman for guidance.

Platform Loading

On an 850 tower a platform comprises a single deck. 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.

The quantities on page 5 will enable BOSS towers to be built safely and therefore comply with the requirements of the Work at Height Regulations 2005. They include double guardrails to all platforms, and toeboards will need to be added if any levels are used as working platforms and for storage of materials. BS1139 requires platforms at least every 4m, and these measures will exceed that requirement.

Ballast: Internal/External use

Stabiliser requirements are based on calculations from BS1139:

1. Up to 8.2m (platform height) the stabilisers and ballast are shown for external use.
2. Above 8.2m the shedule is for internal use only.

For internal use only towers may be erected up to 12.2m without ballast. SP10 stabilisers may be fitted up to 9.7m platform height. For greater rigidity, fit SP15 stabilisers at lower height.

Mobile Outriggers

MP7 and MP16 mobile outriggers can be used instead of SP10 and SP15 telescopic stabilisers respectively, as detailed below. MP7 mobile outrigger kits comprise:

MP7 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:

SP10/SP15 STABILISER	4
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Quantity Schedule - 850 Advanced Guardrail System

BOSS 850 Ladderspan to HD1004: Advanced Guardrail System - Available in 2 lengths, 1.8m and 2.5m Internal/External Use

Description	Internal Use only																							
	3.2m 1.2m	3.7m 1.7m	4.2m 2.2m	4.7m 2.7m	5.2m 3.2m	5.7m 3.7m	6.2m 4.2m	6.7m 4.7m	7.2m 5.2m	7.7m 5.7m	8.2m 6.2m	8.7m 6.7m	9.2m 7.2m	9.7m 7.7m	10.2m 8.2m	10.7m 8.7m	11.2m 9.2m	11.7m 9.7m	12.2m 10.2m	12.7m 10.7m	13.2m 11.2m	13.7m 11.7m	14.2m 12.2m	
125/150/200mm 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
250mm 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
850 2 Rung Ladder Frame	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
850 2 Rung Span Frame	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
850 3 Rung Ladder Frame	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
850 3 Rung Span Frame	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
850 4 Rung Ladder Frame	1	1	1	1	2	1	2	2	3	2	3	3	4	3	4	4	5	4	5	5	6	5	6	6
850 4 Rung Span Frame	1	1	1	1	2	1	2	2	3	2	3	3	4	3	4	4	5	4	5	5	6	5	6	6
1.8m and 2.5m Advanced Guardrail	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1.8m and 2.5m Trap Door Deck	1	1	1	1	2	2	2	2	2	2	3	4	4	4	4	5	5	5	5	6	6	6	6	6
1.8m and 2.5m Horizontal Brace (red)	2	2	2	2	6	6	6	6	10	10	10	10	14	14	14	14	18	18	18	18	22	22	22	22
2.1m and 2.7m Diagonal Brace (blue)	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 and 2.5m Side Toeboard	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
0.6m Toeboard	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Toeboard Holder	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

SP7 Fixed stabiliser																								
SP10 Telescopic Stabiliser																								
SP15 Telescopic Stabiliser																								

Ballast required (kgs) 2.5m																								
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Total Tower self-weight (kgs) 1.8m	88	94	121	127	154	161	167	186	199	205	226	260	273	280	286	291	305	311	331	351	365	371	377
Total Tower self-weight (kgs) 2.5m	100	107	134	140	175	182	189	208	248	280	331	296	311	318	324	335	351	358	379	404	420	427	433

IMPORTANT! For other Quantity Schedule information refer to page 6 - 850 3T method

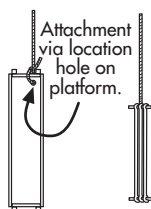
Usage Advice

Erection

- Check that all components are on site and that they are functioning correctly – See Quantity Schedule.
- 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 275kgs (606lbs), per platform unit, uniformly distributed up to a maximum of 950kgs (2100lbs) per tower (including self weight).
- Towers must always be climbed from the inside during assembly using the built-in ladder provided.
- Adjustable legs should only be used for levelling.

Lifting of equipment

- Tower components should be firmly secured by a reliable lifting material (e.g. rope), employing a reliable knot (e.g. clove hitch), to ensure safe fastening.



Stabilisers/Ballast

- Stabilisers or outriggers and ballast weights should always be fitted when specified.
- Ballast is used at the base to stabilise towers against overturning. The Quantity Schedule shows the recommended stabilisation. In circumstances where there is restricted ground clearance for stabilisers/outriggers, contact your supplier for advice. It 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 personnel 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 sufficiently above the ground to clear ground obstructions.
- The height of the tower, when being moved, should not exceed 2.5 times the minimum base dimensions, or 6 metres overall height.

Usage Advice

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 m.p.h.), cease working on the tower. If the wind becomes a strong breeze, expected to reach 11.3 metres per second (25 m.p.h.), tie the tower to a rigid structure. If the wind is likely to reach gale force, over 18 metres per second (40 m.p.h.), 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 funneling effect.

- Do not abuse equipment. Damaged or incorrect components should never 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 to other structures.
- Beware of horizontal forces (e.g. power tools) which could generate instability. Maximum horizontal force 20kg.
- The stairway towers featuring an inclined staircase access are for use with personnel frequently carrying tools and/or materials.
- Mobile towers are not designed to be suspended - please refer to your supplier for advice.

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 dia. tube of the tower should be used. Ideally ties should secure to both faces of a solid structure or by means of anchorages.
- The tie frequency may vary depending on the application, but they should, at a minimum, be at every 4 metres height.

Maintenance

- All components and their parts should be regularly inspected to identify damage, particularly to welds. Lost or broken parts should be replaced, and any tubing with indentations greater than 5mm should be put to one side for manufacture repair. Adjustable leg threads should be cleaned and lightly lubricated to keep them free running.

Assembly and dismantling procedures

THE 3T 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 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 Heights 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	2 rung
2.7 4.7 6.7 8.7 10.7	3 rung
1.2 3.2 5.2 7.2 9.2 11.2	4 rung

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

Refer to the quantity schedules for detail.

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.

Assembly and dismantling procedures

ADVANCED GUARDRAIL SYSTEM

In addition to the 3T method, Youngman also recommends the BOSS Advanced Guardrail System.

When building a BOSS tower with Advanced Guardrail Frames:

- By using the BOSS Advanced Guardrail you will ensure compliance with the Work at Height Regulations by providing a guardrail in advance of climbing onto a platform. The BOSS Advanced Guardrail System features guardrail protection that is pre-set to the correct heights and dimensions.
- **IMPORTANT!** Always start building the tower with the smallest frames at the base i.e. 2 rungs, and/or 3 rung frames followed by 4 rung frames. Refer to the quantity schedules for detail.
- Platforms are installed every 2 metres. On 1450 towers, each platform level has 2 decks.
- When you reach the required working height, make sure you engage the interlock clips on the Advanced Guardrail frames. Youngman recommends that the Advanced Guardrail System is left in place on the top platform until it is dismantled. This removes the need to fit 4 horizontal braces as guardrails on the top platform. However if you wish to use the Advanced Guardrail System to build another tower whilst leaving the first tower standing, you **MUST** fit an additional 4 horizontal braces to act as guardrails for the top platform.
- **BEFORE** moving the Advanced Guardrail frames upwards to the next platform level you must install 2 horizontal braces on both faces of the tower to act as guardrails

To dismantle a BOSS tower with Advanced Guardrail Frames:

- If the Advanced Guardrail System has been removed to build other towers it must be replaced at the highest platform before dismantling commences.
- Climb to the highest platform. Remove toe boards and toe board clips and disconnect diagonal braces. Remove horizontal braces acting as guardrails.

IMPORTANT! The Advanced Guardrail frames MUST be in position before you remove any horizontal braces.

- Climb down to the platform below. Move Advanced Guardrail frames down to the platform you are now standing on.
- Remove the decks, end frames and diagonals, above the level you are standing on.
- Dismantling then proceeds in the same sequence for the remainder of the tower.

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/legs correctly adjusted



Diagonal braces fitted



Stabilisers/outriggers fitted as specified



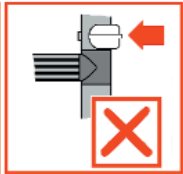
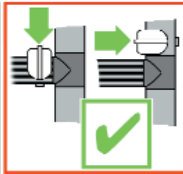
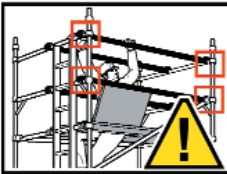
Platforms located and windlocks on



Toeboards located



Check guardrails are fitted correctly. See illustration below.



ENSURE HORIZONTAL BRACES/GUARDRAILS ARE FITTED CORRECTLY.

ALWAYS FIT AS SHOWN.

REFER TO THIS CHECKLIST BEFORE USING EACH TIME.

Assembly Procedure 1450 Tower - 3T

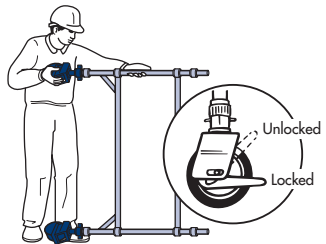
Always start building with the smallest height frames at the base of the tower:

Platform Heights 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	2 rung
2.7 4.7 6.7 8.7 10.7	3 rung
1.2 3.2 5.2 7.2 9.2 11.2	4 rung

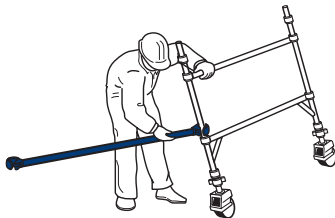
Where all 3 frame heights are used in a tower, start with 2 rung frames at the base, with the 3 rung frames next and the 4 rung frames on the top. Refer to the quantity schedules for detail. The procedure illustrated shows a tower starting with a 2 rung frame.

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.

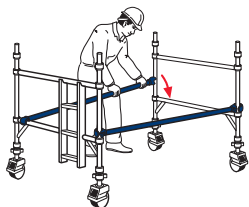
- 1 Push castor onto adjustable leg. Insert adjustable leg/castor assemblies into 2 rung span frame. Lock castors. Repeat with ladder frame. Base plates can be fitted to adjustable legs if it is not necessary to move the tower.



- 2 Fit a horizontal brace (red) onto the vertical of the span frame, facing claws outwards. The frame will now be self-supporting.
Note: All locking claws must be opened before fitting.

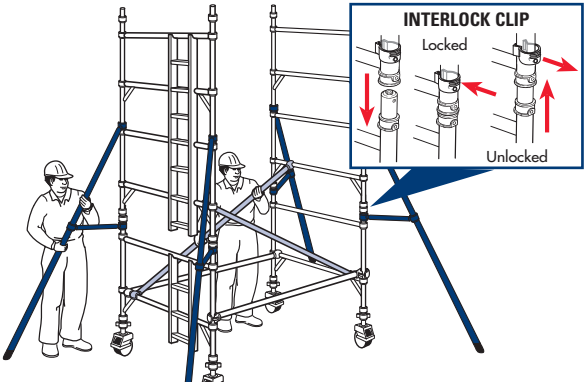


- 3 Position ladder frame as shown. Fit the other end of the horizontal brace onto the ladder frame vertical. Fit another horizontal brace between the rungs of both frames to square the tower.



Assembly Procedure 1450 Tower - 3T

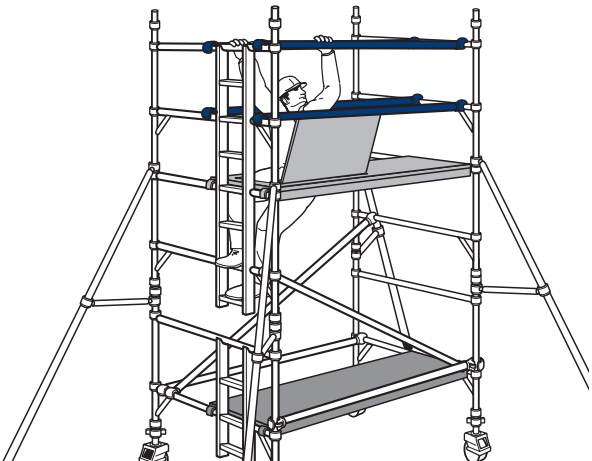
- 4** Fit 2 additional end frames and check the frame interlock clips are engaged. Fit 2 diagonals, in opposing directions, between the 1st and 3rd rungs. Ensure the frames are vertical and level by checking with a spirit level and setting the adjustable legs as required. Fit stabilisers (see notes on page 30).



- 5** Fit a fixed deck on lowest rung. Fit a trapdoor deck on 4th rung (2.0m) with the trapdoor next to the ladder. Climb ladder and, from a protected trapdoor position, fit guardrails on 5th and 6th rungs, in that order, on both sides of the platform.

Do not climb onto the platform until fully guardrailed.

Guardrails should be 0.5m and 1.0m (1 and 2 rungs) above platform in all cases.



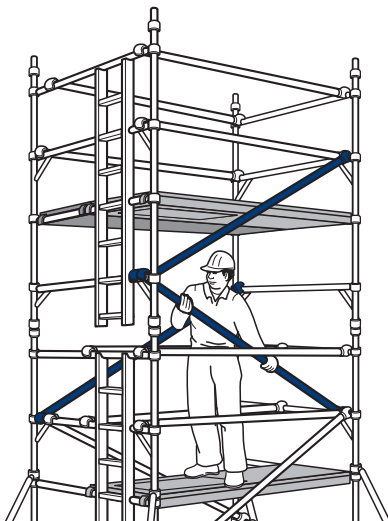
Assembly Procedure 1450 Tower - 3T

- 6** Fit the next pair of diagonal braces in opposing directions between the 3rd and 5th rungs. Add 2 additional end frames.



- 7** If finishing at this height, (4.2m platform), the fixed deck should first be repositioned to the 8th rung of the tower. Fit a trapdoor deck alongside it, with the trapdoor next to the ladder.

Climb ladder and, from a protected trapdoor position, fix guardrails on 9th and 10th rungs, in that order, on both sides of the tower. Add a diagonal brace.

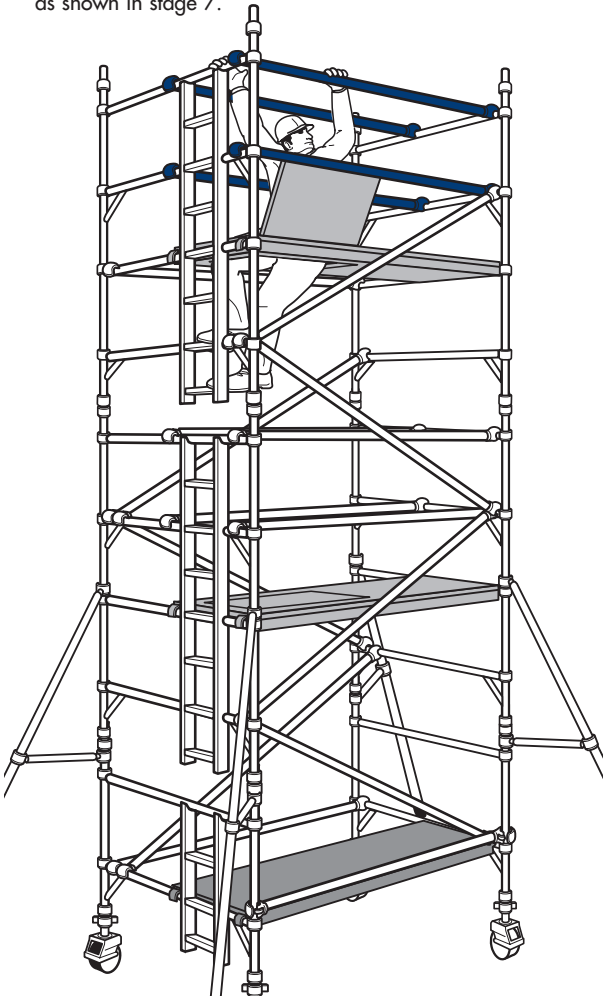


Assembly Procedure 1450 Tower - 3T

8 When building beyond a 4.2m platform height.

Continue to add end frames, diagonals and trapdoor platforms as shown in the previous steps. Add guardrails at 0.5m and 1.0m (in that order) above the platform from the protected trapdoor position. **Do not climb onto the platform until it is fully guardrailed.**

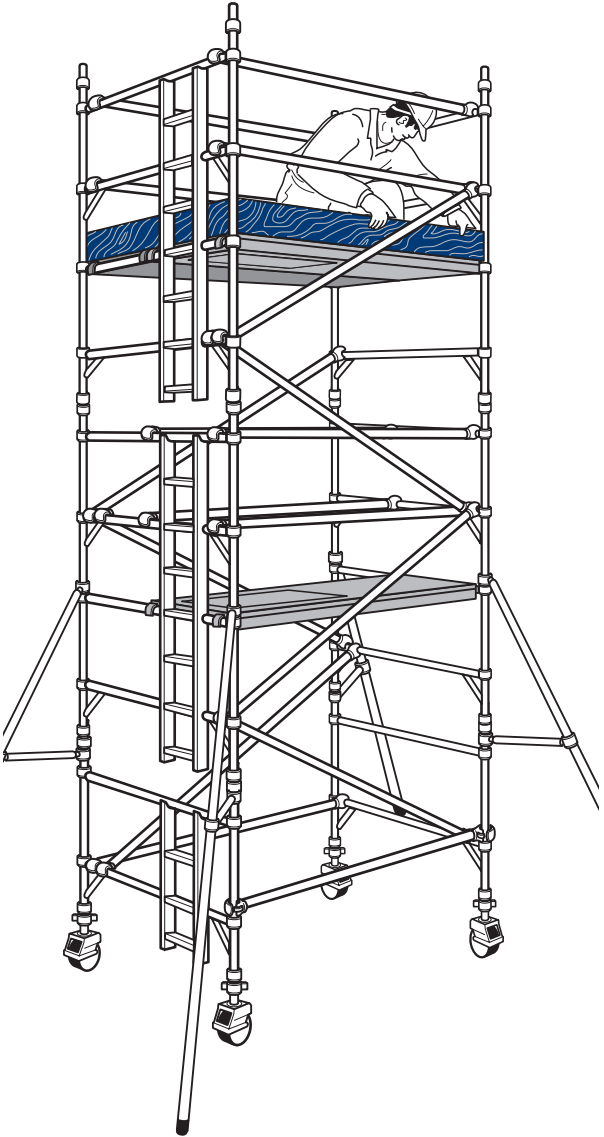
Continue until the required height is reached. Reposition the fixed deck to the required platform height and fit a trapdoor deck alongside it as shown in stage 7. Fit the final guardrails as shown in stage 7.



Assembly Procedure 1450 Tower - 3T

- 9 Fit toeboards (see instructions on page 29).

The tower is now complete.



Assembly Procedure 850 Tower - 3T

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

Platform Heights 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	2 rung
2.7 4.7 6.7 8.7 10.7	3 rung
1.2 3.2 5.2 7.2 9.2 11.2	4 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 tower starting with a 4 rung frame.

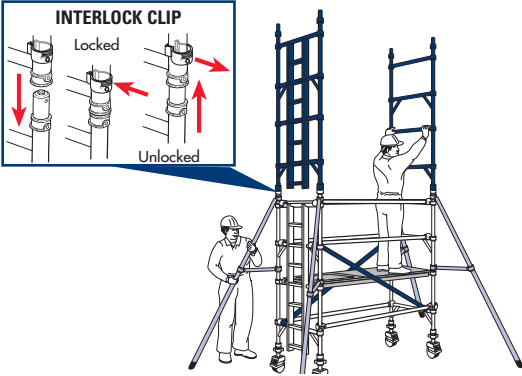
- 1** Insert adjustable leg/castor assemblies into end frames and lock the castors (see diagram page 14, step 1). Base plates can be fitted to the adjustable legs if it is not necessary to move the tower. Fit 2 horizontal braces to the 850 end frames as shown in steps **2** and **3** for the 1450 tower procedure (page 14). Ensure the frames are vertical and level by checking with a spirit level and setting the adjustable legs required.
- 2** Fit a deck on the 2nd rung with the trapdoor next to the ladder. Fix guardrails on the 4th and 5th rungs on both sides of the tower.



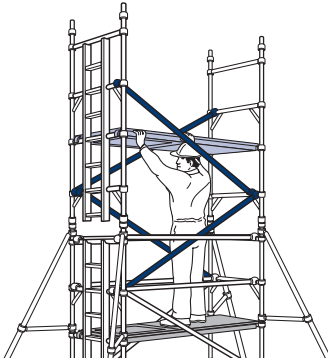
- 3** Fit 2 diagonal braces in opposing directions between the 1st and 3rd rungs. Ensure the frames are vertical and level by checking with a spirit level and setting the adjustable legs as necessary.

Assembly Procedure 850 Tower - 3T

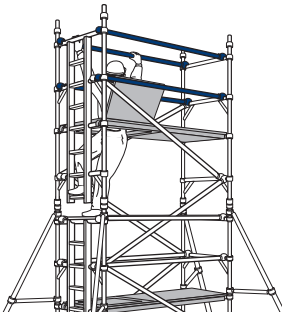
Fit the next pair of end frames and check the frame interlock clips are engaged. Fit stabilisers (see notes on page 30).



- 4 Fit 2 pairs of diagonal braces in opposing directions between the 3rd and 5th rungs and the 5th and 7th rungs. Locate a trapdoor deck on the 6th rung with the trapdoor next to the ladder.



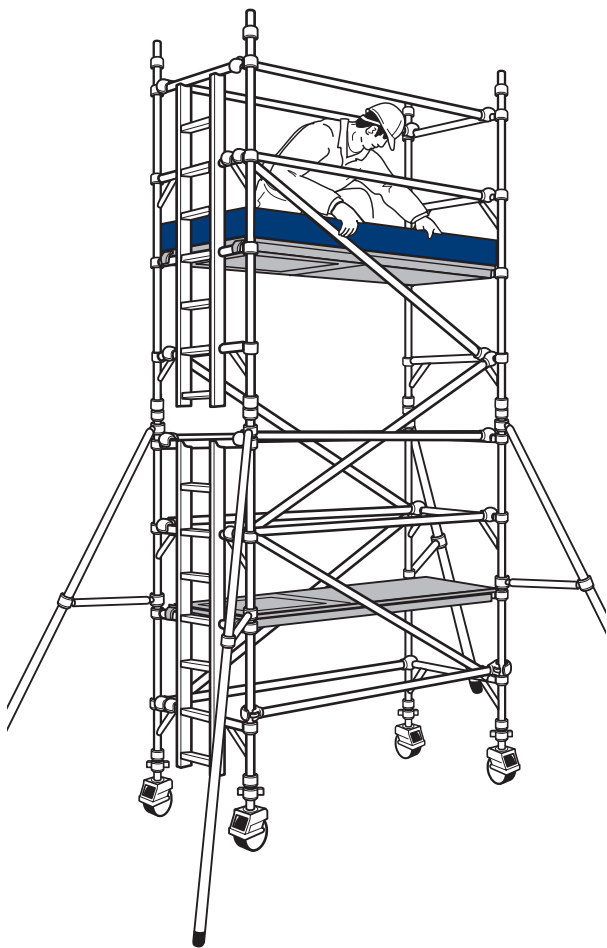
- 5 Climb the ladder and from the protected position of the trapdoor, fit guardrails to the 7th and 8th rungs (in that order), on both sides of the tower.



Assembly Procedure 850 Tower - 3T

- 6 Continue the procedure until the required working height is reached, adding additional end frames, diagonal braces and platforms. Always add horizontal guardrails from the protected position within the trapdoor, (as shown in step 5). Fit the toeboards (see instruction on page 29).

The tower is now complete.

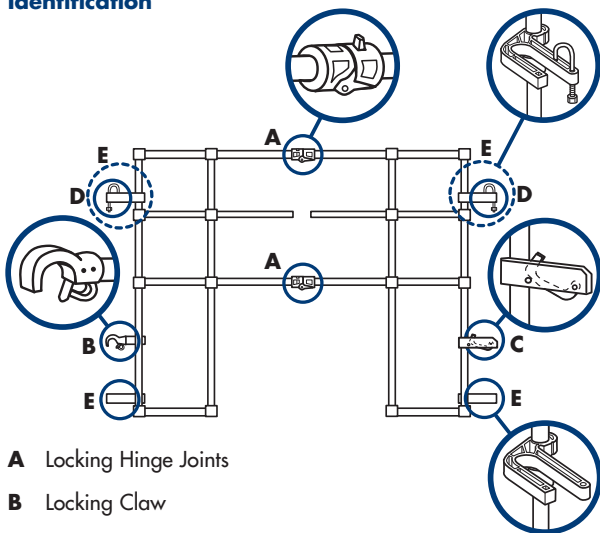


Assembly Procedure - Advanced Guardrail

The BOSS Advanced Guardrail is available for 1.8m or 2.5m platform lengths as required.

Two Advanced Guardrail frames are required to build a tower.

Identification



- A** Locking Hinge Joints
- B** Locking Claw
- C** Windlatch
- D** Interlock Clips
- E** U-Brackets

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

Platform Heights 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	2 rung
2.7 4.7 6.7 8.7 10.7	3 rung
1.2 3.2 5.2 7.2 9.2 11.2	4 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 top. Refer to the quantity schedules for details.

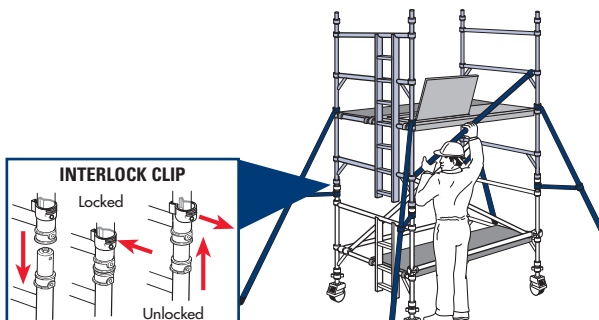
The procedure illustrated shows a tower starting with a 2 rung frame. The method is the same for both 1450 and 850 towers.

Assembly Procedure - Advanced Guardrail

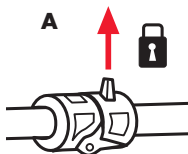
Assembly

- 1 Insert adjustable leg/castor assemblies into end frames and lock the castors (see diagram page 14, step 1). Base plates can be fitted to the adjustable legs if it is not necessary to move the tower. Fit 2 horizontal braces to the end frames as shown in steps 2 and 3 for the 1450 tower procedure (page 14).
- 2 Add the next pair of end frames and check the frame interlock clips are engaged. Fit 2 diagonal braces between the 1st and 3rd rungs of the tower. Ensure the frames are vertical and level by checking with a spirit level and setting adjustable legs as required. Fit stabilisers (see notes on page 30). Fit another diagonal between the 3rd and 5th rungs.
On 1450 towers fit a fixed and a trapdoor deck on the 4th rungs of the tower with the trapdoor next to the ladder. On 850 towers insert a trapdoor deck with the trapdoor next to the ladder.

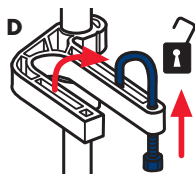
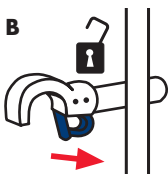
Never climb onto the platform until the Advanced Guardrails are in position on both sides of the tower with the locking claws and windlatches engaged.



- 3 Unfold the advanced guardrails, making sure both locking hinge joints (A) are locked in the open position with the operating trigger in the out position.

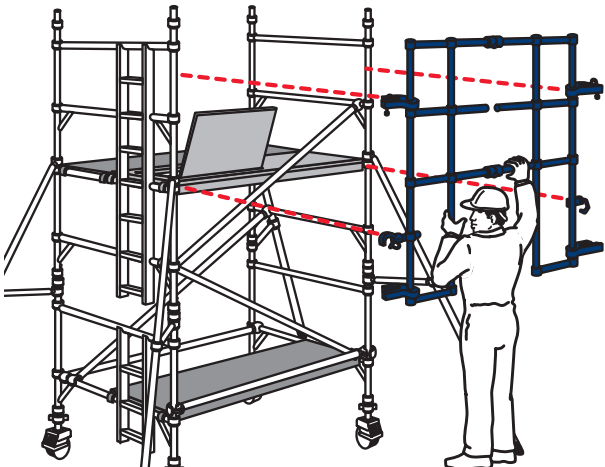


- 4 Open the locking claw (B) and check the windlatch (C) and the interlock clips (D) are also in the open position.



Assembly Procedure - Advanced Guardrail

- 5** Hold the guardrail with the locking claw (**B**) on your left hand side. Lift the guardrail by holding the two middle vertical frame tubes and raise it until the windlatch plate (**C**) and locking claw (**B**) are level with the horizontal rungs of the end frames, at the platform level (4th rung).

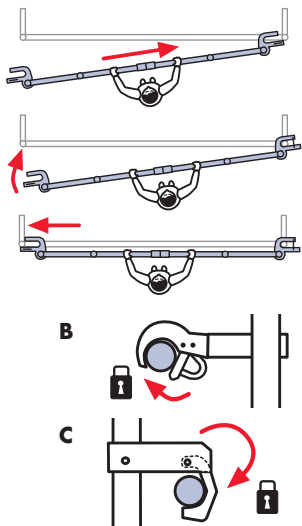


Move the guardrail to the right to fully engage the right hand U-brackets (**E**) onto the vertical of the right hand end frame, with the windlatch plate resting on the horizontal rung at the platform level.

Move the left hand side of the guardrail inwards.

Move the frame to the left to engage the left hand U-brackets (**E**) with the vertical of the left hand end frames.

Position the locking claw (**B**) over the rung of the left hand end frame at the platform level and pull downwards to lock the claw. Engage the windlatch (**C**) over the rung of the right end hand frame.



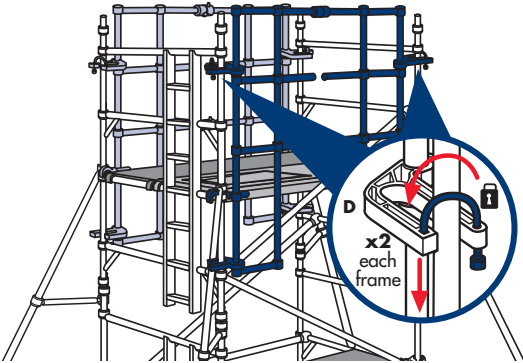
- 6** Repeat this procedure to fit the second guardrail on the other face of the tower.

Assembly Procedure - Advanced Guardrail

- 7** If the tower is to be used at this height (2.2m platform height) climb the ladder to the platform.

IMPORTANT! Engage interlock clips (**D**), on the top U-brackets, at **both** ends of each guardrail frame. Fit the toeboard clips and add toeboards (see page 29).

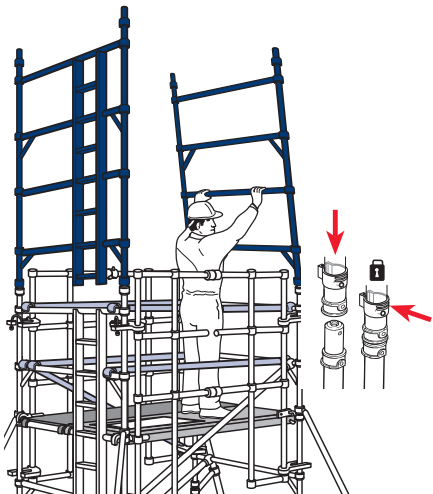
The tower is now complete for the 2.2m platform height.



- 8** When building a tower higher than a 2.2m platform tower, omit step **7** and proceed as follows from step **6**.

Fit a fourth diagonal brace, in the opposite direction, on the other side of the tower, between the 3rd and 5th rungs. Climb the ladder to the platform and fit 2 horizontal braces on each side of the tower, on the 5th and 6th rungs (0.5m and 1.0m) above the platform. These braces will become the platform guardrails

when the advanced guardrail is moved up the tower. Add an additional end frame at each end of the tower and engage the frame interlock clips.



Assembly Procedure - Advanced Guardrail

9 Fit the next pair of diagonal braces. Fit a fixed and a trapdoor deck on 4 rungs (2m) above the platform level. On 850 width towers insert a trapdoor deck.

10 To advance the guardrail frame, open the locking claw (B) and unlock the windlatch (C).

Lift the guardrail frame up and move it sideways to disengage the U-brackets (E) at the locking claw (B) end of the frame. Move the locking claw (B) end of the guardrail frame

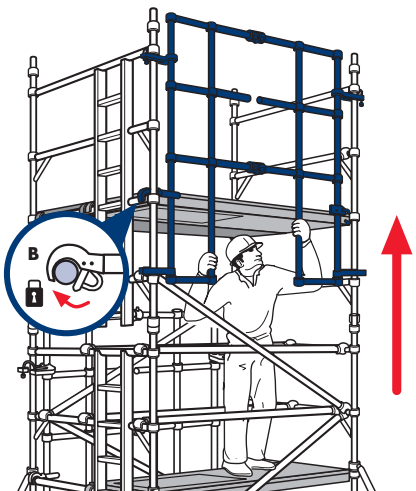
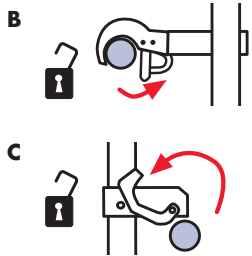
outwards and then move the frame sideways to disengage the U-brackets (E) at the windlatch (C) end of the frame.

Raise the guardrail frame, holding the two middle vertical tubes, until the windlatch plate (C) and locking claw (B) are level with the horizontal rungs of the end frames, at the platform level above your head.

Move the guardrail frame sideways to fully engage the U-brackets (E) at the windlatch (C) end of the frame onto the vertical end of the frame, with the windlatch plate resting on the horizontal rung at the platform level.

Move the locking claw (B) end of the guardrail frame inwards and then move the frame sideways to engage the U-brackets (E) onto the vertical of the end frame.

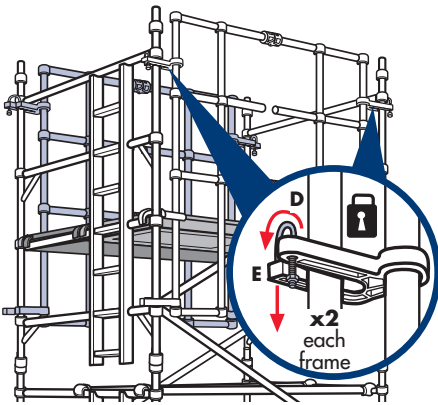
Position the locking claw (B) over the rung of the end frame and pull downwards to lock the claw. Lock the windlatch (C).



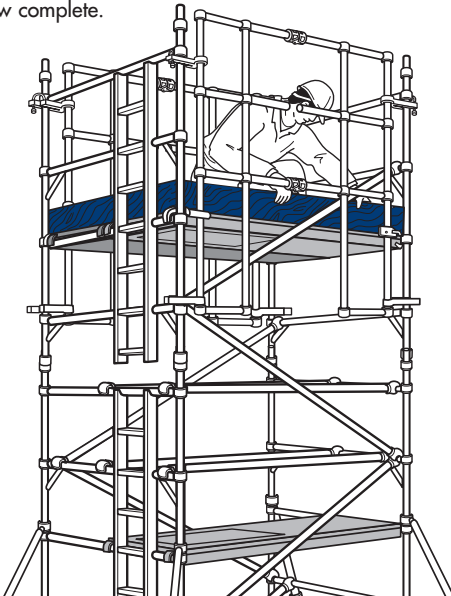
Assembly Procedure - Advanced Guardrail

- 11** Repeat this procedure to advance the second guardrail on the other face of the tower.
- 12** Continue to construct the tower and advance the guardrail by repeating steps **8** to **11** until the required height is reached.

IMPORTANT! Engage interlock clips (D) on the top U-brackets (E) at both ends of each advanced guardrail frame.



- 13** Finally fit the toe board clips and toe boards. The tower is now complete.



Dismantling Procedure - Advanced Guardrail

- 1** To dismantle a BOSS Tower with BOSS Advanced Guardrail frames is the reverse of the assembly sequence.

However, if the Advanced Guardrail System has been removed to build other towers, it must be replaced at the highest platform before dismantling commences.

- 2** Climb to the highest platform.
- 3** Remove toe boards and toe boards clips and disconnect diagonal braces. Remove horizontal braces acting as guardrails.

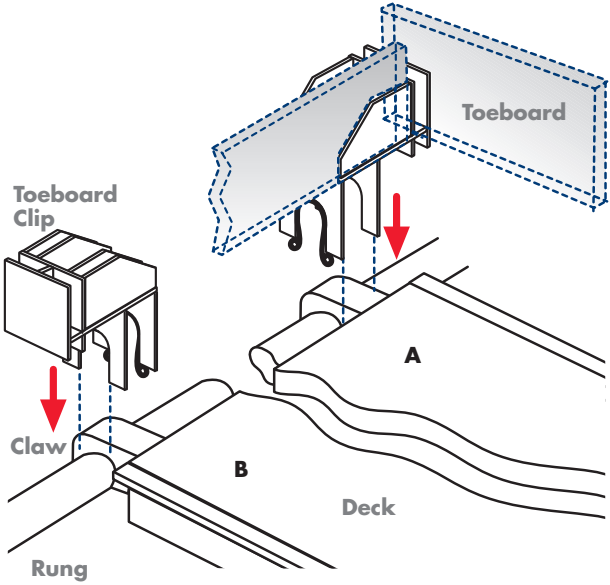
IMPORTANT! The Advance Guardrail frames MUST be in position before you remove any horizontal braces.

- 4** Climb down to the platform below. Move the advanced Guardrail frames down to the platform you are now standing on. Remove the decks, end frames and diagonals, above the level you are standing on.
- 5** Dismantling then proceeds in the same sequence for the remainder of the tower.

Toeboards

Fitting Toeboards

Lock yellow plastic toeboard 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 toeboards into slots in toeboard clips as shown.



Stability

Stabilisers

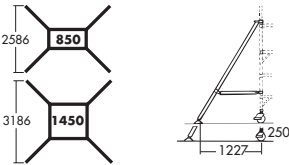
Stabilisers are used when the tower is to be used occasionally, frequent movement will require outriggers.

Attach one stabiliser to each corner of the tower at approx. 45 degrees. Secure top clamp below castings, bottom clamp as low as possible. If clamp is obstructed, release and move. Ensure clamps are rigidly fixed to limit movement.

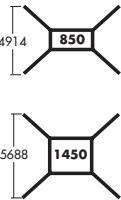
With SP10 and SP15 stabilisers, extend telescopic leg until in contact with ground.

When moving, check for obstructions and lock feet about 25mm off the ground, unlock castors, and move. After moving, check all castors are in ground contact and lock stabiliser feet.

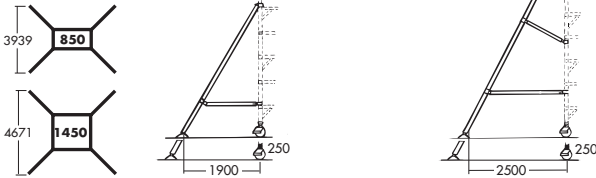
SP7



SP15



SP10



Outriggers

For information on mobile outriggers please consult your supplier.

YOUNGMAN

www.youngmangroup.com

National Sales Office: T 08700 130 360

Email: youngmansales@youngmangroup.com

Head Office: Youngman Group, The Causeway, Maldon, Essex, CM9 4LJ

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