

## ALTO HEAVY DUTY DOUBLE WIDTH BRIDGE TOWER Aluminium Access Tower





### Instruction Manual BS EN 1004-2:2021 The ALTO HD Bridge Tower is certified to BS 1139-6:2022

## **3T - Through The Trapdoor Method**

## Assembly guide using *5 Rung* Starter Frames & Tied-In



Lakeside Industries Ltd



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## Introduction

Please read these instructions carefully and ensure that you fully understand all of the information contained herein. All of the information in this document is vital for the safe utilisation of your Alto Heavy Duty Tower in Bridge Tower applications.

These instructions only cover the assembly of this configuration of equipment, which is designed primarily for construction and maintenance tasks in a fixed position over a large area at platform heights of between 4m and 12m. All Alto Access products are professional quality engineered equipment designed primarily with safety in mind and meet or exceed all standards, recommendations and guidelines. Used properly, Alto access equipment will keep you safe when working at height.

This manual contains all of the information necessary to correctly assemble your Alto Heavy Duty mobile access tower equipment for this application in accordance with BS 1139-6:2022 and incorporates all of the requirements of the PASMA 3T method of assembly as endorsed by the HSE.

This manual should be used in conjunction with your Risk Assessment and Method Statement and in line with the Work at Height Regulations 2005 which place an obligation on employers to eliminate or minimise risks. This manual must be made available to the user/assembler at all pertinent times.

A Risk Assessment and Method Statement must be undertaken before installation commences and should include the relevant stabilisation to be applied to the specific structure being built in line with the guidance contained in this manual.

Only competent and qualified personnel should undertake erection, dismantling or alteration, organisation, planning or supervision of mobile access towers. In the case of any doubt, sufficient relevant additional training must be given beforehand to ensure safe use. For further information on the use of mobile access towers consult PASMA (www.pasma.co.uk; Tel +44 (0) 345 2 30 4041).

For any additional technical information or specific advice please contact the manufacturer Lakeside Industries Limited Tel: +44 1527 500577 or Email: sales@altoaccess.com.

# Certifications

The Alto Heavy Duty Tower is a mobile access tower certified to BS EN 1004-1:2020 Class 3. These instructions cover applications outside the scope of BS EN 1004-1:2020, within the scope of BS 1139-6:2022 to ensure that the configuration of the equipment meets the relevant requirements. This tower is manufactured in our ISO 9001 accredited facility. This manual complies with BS EN 1004-2:2021.

## Maximum Safe Working Loads

The safe working load of each bay of the tower is 1,500 kg including its own weight as it is to be assembled on base jacks. The maximum leg load imposed by the tower on its supporting surface is 750 kg when loaded to its maximum safe working load. The tower is a Class 3 tower.

The maximum safe working load of any individual platform within the tower is 324 kg evenly distributed.

The maximum safe uniformly distributed working load which may be placed on the working platform of any one bay of the tower is 648 kg.

The maximum number of working platforms allowed in this configuration is 1.

The maximum number of operatives permitted on the tower during use is 12.

The maximum number of operatives permitted on the tower during assembly and dismantling is 8.

The maximum number of operatives permitted on any one platform unit is 2.

The maximum number of people on a working platform level permitted to simultaneously exert a horizontal load of 0.3 kN is 1 per bay.

If higher loadings are required, contact your supplier or the manufacturer - Lakeside Industries Limited, for advice. Tel: +44 1527 500577 or Email: sales@altoaccess.com.

## **Inspection Care & Maintenance**

Alto Access equipment is designed and manufactured to the highest standards in the industry and is stronger, more robust and safer than any comparable competitor product. Properly cared for, it will give a long and productive service life.

Inspection and maintenance guidance is published by the manufacturer for Alto HD equipment. This may be found here: www.altoaccess.com/assets/inspection\_hd.pdf

ALTO HD Tower System equipment should not be modified in any way and should only be repaired by the manufacturer - Lakeside Industries Ltd - or by authorised agents. If it is suspected that equipment has been damaged, modified or repaired by any other provider, the equipment should be quarantined and returned to Lakeside Industries Ltd for free inspection. No liability will be accepted in relation to equipment that has been subjected to unauthorised modification or repair. ALTO HD Tower System equipment is a robust product designed to operate in the construction industry environment. However, misuse or mishandling (including dropping or overloading or otherwise incorrectly using components) risks impairing the structural integrity of the components.

Components should be handled with care and stacked and secured safely whilst in transit.

Never use any equipment which is damaged, has parts missing or is improperly assembled.

## Safety

- This information shall be available at the location of use of the prefabricated tower scaffold.
- This prefabricated tower scaffold shall only be used according to this information.
- A risk assessment and method statement must be prepared sufficient to ensure the safe assembly, use and dismantling of a freestanding bridge tower structure and the elimination or minimisation of all consequent risks.
- Check that all of the necessary components, tools and equipment for the particular tower configuration to be built are on site, undamaged and functioning correctly. Damaged/incorrect components must not be used.
- BS 1139-6:2022 tower applications may only be used with 3T Alto towers. BS 1139-6:2022 tower applications may not be created using Advance Guard Rail (AGR) towers.
- This is a static tower. These instructions only cover the assembly of this specific structure on base jacks. If a mobile tower structure is required, contact the manufacturer Lakeside Industries Limited for advice Tel: +44 1527 500577 or Email: sales@altoaccess.com. This tower is not to be moved when built.
- Check that the surface on which the tower is to be located is capable of supporting the tower and its payload. Check that the level and slope of the ground do not render the location unsafe for the purposes of assembling, using and dismantling the tower.
- Beware obstructions when assembling, altering and dismantling the tower.
- When working outdoors, the weather forecast shall be taken into account before assembly, use and dismantling.
- Platforms must be installed with vertical distances between them not exceeding 2.1m when assembling and dismantling.
- Towers must always be climbed from the inside using the built-in ladders (or Alto stair units if applicable). If the work carried out from the tower requires frequent carrying of equipment and materials up or down the tower, an Alto stair tower should be used in preference to a ladderspan tower.
- The tower must be levelled when erected using the adjustable jack legs.

- Four or more persons are required for the safe erection and dismantling of this tower.
- Always comply with the Work at Height Regulations 2005 when erecting, dismantling & using the tower.
- When lifting components, tools or materials, always use reliable lifting equipment and fastening methods and always lift from within the footprint of the tower structure to prevent risk of the tower overturning.
- Users must be aware of the effects of horizontal and vertical loads on the structure when using the tower which may impair the stability of the tower. Examples would be loads resulting from work on an adjacent structure or wind loads which may be increased by tunnelling effects around adjacent buildings.
- Beware live electrical installations, cables, moving machinery or other obstructions when erecting, dismantling or using the tower. The tower is a conductive metallic structure.
- Do not use boxes, ladders or other items to gain additional height.
- Do not stand on guard rails for any reason.
- If the tower is to be used in connection with hoisting arrangements, this requires specific advice from the manufacturer to ensure safety. Contact the manufacturer Lakeside Industries Limited for advice on loadings Tel: +44 1527 500577 or Email: sales@altoaccess.com.
- Prefabricated tower scaffolds in accordance with this standard are not designed to be lifted or suspended.
- When fitting platforms always engage wind latches.
- Fit guard rails to all Platforms.
- Fit toe boards to all Working Platforms.
- Every erected tower must be inspected at least every seven days and any tower which has been left unattended should be inspected before use to ensure that:
  - 1. No components have been removed or relocated incorrectly;
  - 2. The tower is still vertical; and
  - 3. No environmental or other factors have arisen which will influence safe use of the tower.
  - 4. the applied stabilisation methods and devices are still correctly positioned and operating effectively.
- Alto Access Products recommends the use of the PASMA TowerSure inspection system. For more information, please visit: pasma.co.uk/towersure.
- This tower is not to be sheeted.
- Alterations to the prefabricated tower are only permitted where they are shown in these instructions.
- User training courses cannot be a substitute for instruction manuals and assembly, use and dismantling plans but can only complement them.

- Only the components specified in this information shall be used.
- Damaged or incorrect components shall not be used.
- Prefabricated tower scaffolds designed in accordance with this standard are not anchor points for personal fall arrest equipment.
- Working is only permitted on a platform with a complete side protection including guardrails and toeboards.
- In the event that an alteration to the prefabricated tower scaffold design is required, approval from the supplier and/or designer shall be obtained and a revised instruction manual or assembly, user and dismantling plan created.
- When a prefabricated scaffold tower is used as a means of access to another place it shall:
  - » Be built on base plates
  - » Be tied in to the adjacent structure with ties of sufficient number and capacity to cope with a horizontal load of 10% of the maximum UDL of the working platform i.e. 2 kN.
  - » Be positioned so that any horizontal gap between the platform of the prefabricated scaffold tower and the place being accessed is no greater than 25 mm; and
  - » Be positioned so that the upper surface of the platform and surface which is being accessed are vertically aligned within a tolerance of ±25 mm.
  - » Means of protection shall be removed only for the time and to the extent necessary to gain access or egress or for the performance of a particular task and shall be replaced as soon as practicable.
  - » Attention is drawn to the Work at Height Regulations 2005 Schedule 1, Schedule 2 Regulation 5 and Schedule 3 Part 1 Regulation 5.
  - » Provision shall be made to prevent falls not only from the prefabricated tower scaffold, but also from the adjacent structure.
  - » The safety of persons once they have transferred to the adjacent place shall be taken into account as this now becomes a place of work at height.
  - The strength of the adjacent place shall be assessed to verify that it is safe to step on to (e.g. not a fragile surface) and is a suitable and a safe place for work with adequate collective protection or other fall prevention measures.
  - » A prefabricated tower scaffold shall not be used as an anchor point for personal fall protection or work positioning equipment. They are not designed for this purpose even when tied to a supporting structure.
  - » A prefabricated tower scaffold shall not be used as a means or element of edge protection. They are not designed or suitable for this purpose even when tied to a supporting structure. Edge protection shall be designed and installed in accordance with BS EN 13374.

# Wind Speeds

The weather forecast must be taken into account before assembly, use and dismantling. Persons using or responsible for towers must beware of the effect of wind on the structure. Wherever possible, as a precaution, it is advisable to tie the tower in to a rigid structure if it is to be used where it is exposed to potential windy conditions. Users should beware the potential tunnelling effect of open ended or unclad buildings and narrow openings between buildings. We recommend that the use of the tower is discontinued in conditions where the wind speed is above 17mph (force 4).

WIND DESCRIPTION	BEAUFORT SCALE	AVERAGE SPEED	INFORMATION
Medium Breeze	4	13-17 mph	Safe to work on tower.
Strong Breeze	6	25-31 mph	Tie the tower to a solid structure. Do not work on tower.
Gale Force	8	39-46 mph	Towers must be dismantled. Towers must not be assembled.

## **Erecting & Dismantling the Tower**

All BS 1139-6:2022 tower structures using Alto HD equipment must be built and dismantled in accordance with the step by step instructions set out below and having regard to the working at height regulations and Health & Safety legislation.

## Frames

Almost all linked tower structures compromise alternating "tower" and "bridge" sections. In Alto structures "odd" number bays are generally tower sections.

It is important to understand which bays are towers and which are bridges for the following reason.

Frames must always be assembled with the offset conical head pointing inwards on "tower" bays.

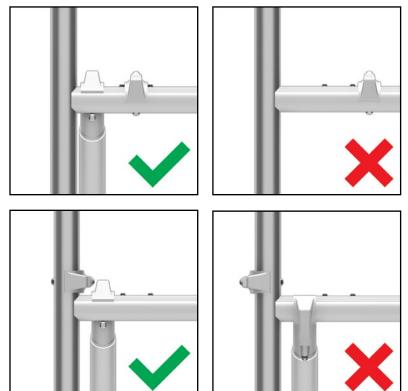




## **Braces**

All braces are fitted with spring loaded pins that automatically lock the brace into position when attached to a tower. Brace hooks **must** be located either over the rung screw heads, between 2 screw heads or between the frame upright and a screw head to prevent lateral movement.

Diagonal braces **must** always be located with the claw opening facing down. Horizontal braces must be located with the claw facing either down (on the rung) or outwards (if on the upright).

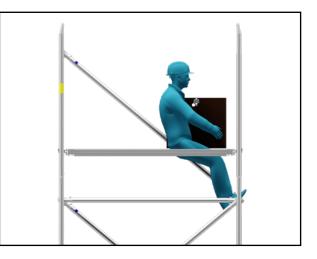


## **3T Method Explained**

The "3T" or "through the trapdoor" method is one of the two permitted ways of assembling a tower without the assembler being at risk of falling. This tower is a 3T tower.

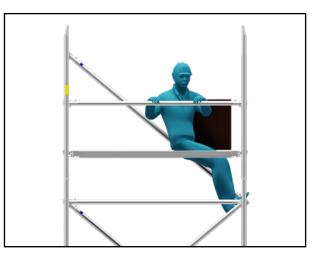
#### Step 1:

As each new level of platform is installed, the operative takes up a working position in the trap door of the platform, standing on the ladder and leaning back against the edge of the trapdoor aperture.



#### Step 2:

From this position the operative fits the horizontal braces 500mm and 1000 mm above the platform level (i.e. on the first and second available rungs). If the far end of the guardrail braces don't fully engage when they are put in place, the operative fully engages it when first climbing up onto the platform. This process ensures that operatives never have to stand on an unguarded platform.

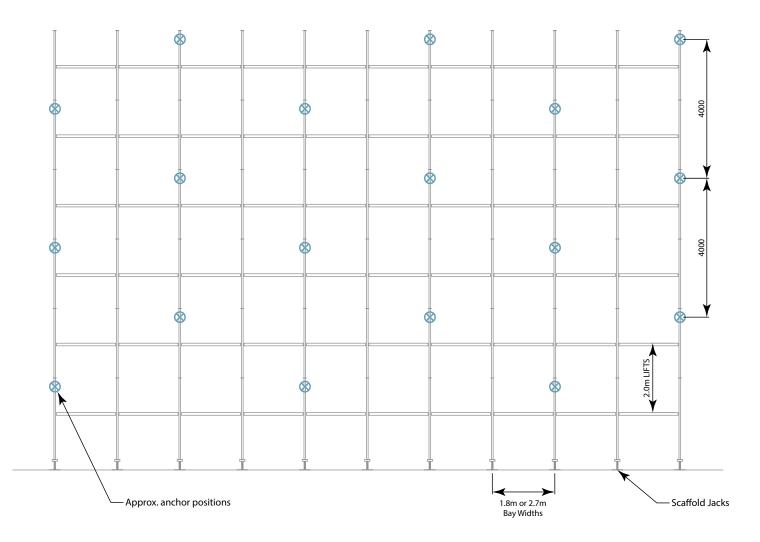


## **Stabilisation**

When assembling linked towers, suitable stability solutions must be used. The following points must be observed:

- A Risk Assessment and Method Statement must be undertaken before installation commences and should include the relevant tying-in method and tying-in locations to be applied to the specific structure being built in line with the guidance contained in this manual.
- Never build linked towers without having adopted and correctly installed the permitted stability solution.
- The permitted stability solution is to securely tie the linked tower into an adjacent rigid structure capable of withstanding the forces that will be imposed upon it by the attachment of the tower.
- The tying in pattern should ensure that the uprights of the tower are tied in a minimum of every 4 metres, both laterally and vertically in an alternating pattern. In practice this means that every other lift is tied in. Additionally, both ends of the structure must be tied in at 4 metre intervals.
- Ties should be located close to a node. A node is a point where a frame rung, upright, horizontal and diagonal brace meet.
- If it is impracticable to tie the tower into a suitable adjacent rigid structure, users must contact the manufacturer Lakeside Industries Limited for advice on possible alternative solutions. Tel: +44 1527 500577 or Email: sales@altoaccess.com.
- When used, select and install anchors in concrete and masonry must be selected and installed in accordance with BS 8539.

- This prefabricated tower scaffold has been designed to be properly secured to a suitable adjacent supporting structure capable of withstanding the forces that will be imposed upon it by the attachment of the tower. Devices for securing the tower must be simultaneously rigid in both tension and compression and capable of withstanding and transmitting the loads imposed by the tower to the supporting structure.
- Scaffold couplers and tubes used for tying in must comply with BS EN 74-1:2005 and BS EN 12811-2:2004 respectively.
- Linked Alto HD towers which are properly tied in to an adjacent rigid structure should be able to withstand all but the most extreme UK weather conditions.
- Further guidance on tying-in techniques is available from the manufacturer: Lakeside Industries Limited, Tel: +44 1527 500577 or Email: sales@altoaccess.com.
- If ballast is necessary, it must be secured in position and made of rigid materials such as steel or concrete, but excluding liquids or granular materials.
- If users consider that ballast may be necessary, contact the manufacturer Lakeside Industries Limited for advice on quantities and locations. Tel: +44 1527 500577 or Email: sales@altoaccess.com.



## **Unattended Towers**

To prevent use by unauthorised persons of complete or incomplete towers when unattended, steps should be taken to prevent unauthorised access. Appropriate steps may include some or all of the following:

- Use of scaffold alarms.
- Suitable physical means such as barriers or site fencing to prevent access to the area immediately around the tower.
- Warning signs identifying the areas where access is not permitted should be displayed at the access points to area occupied by the tower.
- Attaching a well designed and correctly fitted ladder guard to the lowest levels of the tower.
- Appropriate site security.
- Towers which have been left unattended should be inspected before use as outlined on page 5 above.

## Signage

After assembly or alteration, the following minimum information shall be displayed on the prefabricated tower scaffold and be clearly visible from the ground (e.g. on a tag):

- The name and contact details of the responsible person.
- If the tower is ready for application or not.
- The load class and the uniformly distributed load.
- If the prefabricated tower scaffold is intended for indoors use only.
- The date of assembly.
- The maximum number of simultaneous working platforms permitted.
- The maximum number of persons permitted on the working platform(s) during use.
- The maximum number of persons permitted on the tower during assembly and dismantling.
- The maximum number of persons permitted on any one platform.
- The maximum safe working load on working platforms.
- The maximum safe working load on the prefabricated tower scaffold.
- The load class of the prefabricated tower scaffold.
- The maximum horizontal force permitted at the working platform(s).
- The maximum wind limits for working on the prefabricated tower scaffold.
- The maximum wind limits for the prefabricated tower scaffold.

### Double width bridge tower assembly using 1.8m towers & 2.7m link decks.

Build Method 'A'

			4.4m F	Platform Height	n Heig	t t	6.4m P	6.4m Platform Height	Height		8.4m Platform Height	tform	Height	<u> </u>	10.4m Platform Height	atform	Height	<u> </u>	12.4m Platform Height	form H	eight
					°					-			,	+			, 	-			,
CODE	PART DESCRIPTION	Wt	Start   Tower	Even Bay	Odd Bay	End Bay 1	Start E Tower	Even C Bay E	Odd Ei Bay B	End Start Bay Tower	irt Even ver Bay	en Odd Iy Bay	ld End iy Bay		Start Evo Tower Ba	Even Odd Bay Bay	ld End ly Bay	d Start / Tower	: Even r Bay	Odd Bay	End Bay
2233	HD Adj. Swivel Base Jack	2.1	4	•••••	4	-	4	•••••	4	4		•••••		7	4	 4		4	•••••	4	
2001	HD 1.4m Base Frame	12.9	·····					•••••		~	•••••		•••••	`			•••••	~	•••••		
2212	HD 1.4m 5 Rung Ladder Frame	15.5		•••••	·····		·····	•••••		<u></u>	•••••	·····					•••••	~	•••••		•••••
2002	HD 1.4m Main Frame	10.9	•••••	•••••	•••••				 –	5					 m			4		 4	
2213	HD 1.4m 4 Rung Ladder Frame	13.8		•••••	•••••	-		•••••		- 0	•••••				•••••			2	•••••	•••••	— 
2008	HD 1.4m 1/2 Frame	5.6	•••••		 –					<u></u>	•••••		•••••	`			•••••	-	•••••		
2215	HD 1.4m 2 Rung Ladder Frame	6.9		•••••	·····		·····	•••••	·····	<u></u>	•••••	•••••	•••••	`	•••••	•••••	•••••		•••••		•••••
2009	HD 1.4m Walkthru' "H" Frame	10.7	 —		 7	<u>,</u>			 	~	•••••		·····	_				-	•••••	~~~	
2010	HD 1.4m Walkthru' Frame Gate	3.9		•••••		<u>,</u>		•••••	- 	~	•••••		•••••				·····	~	•••••		,
2040	HD 1.8m Brace	2.6			 7		15		15	1.	 6		 6	2	23	: 23	 m	27	•••••	: 27	
2041	HD 2.7m Brace	3.6	4		4			∞		00		 	•••••	~	10	10 : 10		12	10		•••••
2080	HD 1.8m x 3 Rung Brace (Blue)	3.2	5	•••••	~~~		5	•••••	~~~	5	•••••			. 1				2	•••••	~	•••••
2043	HD 1.8m Platform	14.4		•••••	~~~	<u>,</u>	·····	•••••			•••••							~	•••••	~~	
2201	HD 1.8m Trap Platform	15			 –	-	 M	•••••	 	4	•••••							9	•••••	ى 	
2044	HD 2.7m Platform	19.7	•••••				•••••	7	•••••			•••••	•••••	_			•••••		5		•••••
2071	HD D/W Timber Toeboard End	3.6	·····		•••••	-	·····	•••••	•••••	-	•••••	•••••			·····	•••••	 	~	•••••		
2086	HD 1.8m Toeboard Side - Linked Vers.	7.6	•••••	•••••			•••••	•••••			•••••		•••••		•••••		•••••		•••••		•••••
2087	HD 2.7m Toeboard Side - Linked Vers.	8.1	•••••	 7	•••••				•••••				•••••				•••••				
2069	HD 1.8m Timber Toeboard Side	ß	2	•••••	•••••		5	•••••	•••••	2		•••••	•••••		5		•••••	2	•••••		•••••
2074	HD Toeboard Corner Bracket	0.9	5	•••••	•••••	2	5	•••••	•••••	2 2		•••••				•••••		2	•••••	•••••	~
2079	HD Toeboard Inline Socket	0.5	7	7	7	-7	5	5	5	-2 2		5	-7		2 2		-7	2	5	~	-2
	TOTAL SELF WEIGHT OF TOWER (KGS)		188	85	188	4	245	85 2	245	4 303	13 : 93	3 303	3 : 4		360 5 9	93 : 360	0	417	93	417	4

### Double width bridge tower assembly using 1.8m towers & 2.7m link decks

Build Method 'B'

			4.9m	4.9m Platform Height	n Heigl	۲ ۲	6.9m Pl	atforn	6.9m Platform Height		8.9m Platform Height	tform H	leight	10.9	10.9m Platform Height	orm He	ight
CODE	PART DESCRIPTION	Wt	Start Tower	Even Bay	Odd Bay	End Bay <sup>-</sup>	Start E Fower E	Even C Bay F	Odd End Bay Bay		Start Even Fower Bay	en Odd y Bay	d End y Bay	Tower	Even Bay	Odd Bay	End Bay
2233	HD Adj. Swivel Base Jack	2.1	4	•••••	4		4	•••••		4			•••••	4	•••••	4	
2001	HD 1.4m Base Frame	12.9	·····		•••••• ~		·····	•••••	••••••	-	•••••			~	•••••	— ••••••	
2212	HD 1.4m 5 Rung Ladder Frame	15.5		•••••	·····			••••	••••••	-	•••••		•••••	~	•••••	— 	
2002	HD 1.4m Main Frame	10.9	••••	•••••	•••••			•••••	•••••	5			•••••	m	•••••	m	
2213	HD 1.4m 4 Rung Ladder Frame	13.8	·····	•••••	•••••	~		•••••	 	m	•••••		 	4	•••••		~
2006	HD 1.4m 3/4 Frame	8.3	·····		•••••		 ~			-	•••••			~		—	
2214	HD 1.4m 3 Rung Ladder Frame	10.3	·····	•••••	••••••			•••••	•••••• ~	-	•••••	 	•••••	~	•••••	—	
2009	HD 1.4m Walkthru' "H" Frame	10.7	·····	•••••		<u>,</u>			2 	~	•••••			-		~	<u>,</u>
2010	HD 1.4m Walkthru' Frame Gate	3.9	·····	•••••	 7	<u>,</u>		•••••		-	•••••		·····	~	•••••	~	<u>,</u>
2040	HD 1.8m Brace	2.6	12		12 12		16	•••••	16	20				24			
2041	HD 2.7m Brace	3.6	4	∞	4		9			00			•••••	10		10	•••••
2080	HD 1.8m x 3 Rung Brace (Blue)	3.2	7	•••••	~~			•••••		7				2	•••••	~	
2043	HD 1.8m Platform	14.4		•••••	7	<u>,</u>		••••	21	~	•••••		, ,	~		~	<u>,</u>
2201	HD 1.8m Trap Platform	15	5	••••	·····	~	 M	••••		4	•••••			Ŋ		4	-
2044	HD 2.7m Platform	19.7	•••••		•••••		•••••		•••••			•••••	•••••		5	•••••	
2071	HD D/W Timber Toeboard End	3.6	~~~	•••••	•••••	~		•••••		~	•••••	•••••		~	•••••		~
2086	HD 1.8m Toeboard Side - Linked Vers.	7.6	•••••	•••••	5		•••••	•••••			•••••		•••••		•••••	~	
2087	HD 2.7m Toeboard Side - Linked Vers.	8.1	•••••	~	•••••		•••••		•••••			•••••	•••••		5		
2069	HD 1.8m Timber Toeboard Side	Ŋ	7	•••••	•••••		5	•••••	•••••	2		•••••		2	•••••		
2074	HD Toeboard Corner Bracket	0.9	7			2	5			5				2			7
2079	HD Toeboard Inline Socket	0.5	2	2	2	-2	2	2	2 - 2	2			-2	2	2	2	-2
	TOTAL SELF WEIGHT OF TOWER (KGS)	KGS)	197	85	197	4	254 : 8	85 : 2	254 5 4	311	1 93	3 311	1 4	369	. 93	369	4

### Double width bridge tower assembly using 1.8m towers & 2.7m link decks.

Build Method 'C'

4

93 : 402

402

4

93 : 345

345

4

93 : 288

288

4

231 : 85 : 231

TOTAL SELF WEIGHT OF TOWER (KGS)

Bay         Bay         Day         Dower         Bay         Bay         Dower         Bay         Lower         La         La <thla< th=""> <thla< th=""></thla<></thla<>	Bay         Dower         Bay         Dower         Bay         Dower         Bay         B	Bay         Dower         Bay         Dower         Bay         Dower         Bay         B	Bay Lower         Bay Lower         Bay Lower         Bay Lower         Bay Lag         Bay Lag	Bay Lower         Bay Lower         Bay Lower         Bay Law         Bay Law	Bay lower         Bay lower         Bay lower         Bay lower         Bay lower         Bay lower         Bay low         Bay low <th>Bay Lower         Bay Lower         Bay Lower         Bay Lower         Bay Law         Bay Law</th> <th>Bay Lower         Bay Lower         Bay Lower         Bay Lower         Bay Law         Bay Law</th> <th>Bay Lower         Bay Lower         Bay Lower         Bay Lower         Bay Law         Bay Law</th> <th>Bay Lower         Bay Lower         Bay Lower         Bay Lower         Bay Law         Bay Law</th> <th>Bay lower         Bay lower         &lt;</th> <th>Bay         Dover         Bay         Day         Dover         Bay         Dover         Bay         Dover         Bay         Day         <!--</th--></th>	Bay Lower         Bay Lower         Bay Lower         Bay Lower         Bay Law         Bay Law	Bay Lower         Bay Lower         Bay Lower         Bay Lower         Bay Law         Bay Law	Bay Lower         Bay Lower         Bay Lower         Bay Lower         Bay Law         Bay Law	Bay Lower         Bay Lower         Bay Lower         Bay Lower         Bay Law         Bay Law	Bay lower         <	Bay         Dover         Bay         Day         Dover         Bay         Dover         Bay         Dover         Bay         Day         Day </th
4     4     4     4     4     4     4       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       2     -1     1     2     -1     1       2     -1     1     2     -1     2	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
4     1       1     1	4     4       1     1	4     4     4     4       1     1     1     1       1     1     1     1       1     2     1     1       1     2     1     1       1     1     1     1       1     1     1     1       1     1     1     1       1     1     1     1       1     1     1     1       1     1     1     1       1     1     1     1       1     1     1     1       1     1     1     1       1     1     2     1       1     1     2     1       1     1     2     1       1     1     2     1       1     1     2     3       6     10     6     8	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
-     - <td>4 </td> <td>4 1 1 1 1 1 1 1 1 1 1 1 1 1</td> <td>4       -       -       -       -       4         1       1       1       1       1       4         1       1       1       1       1       1         1       1       1       1       1       1         1       1       1       1       1       1         6       10       16       16       16       16         4       10       16       1       1       1       1</td> <td>4       4         1       1         1</td> <td>4       1</td> <td>4       1</td> <td>4       4         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         2</td> <td>4       1</td> <td>4       1</td> <td>4       1</td> <td>4       1</td>	4 	4 1 1 1 1 1 1 1 1 1 1 1 1 1	4       -       -       -       -       4         1       1       1       1       1       4         1       1       1       1       1       1         1       1       1       1       1       1         1       1       1       1       1       1         6       10       16       16       16       16         4       10       16       1       1       1       1	4       4         1       1         1	4       1	4       1	4       4         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         2	4       1	4       1	4       1	4       1
0 0		0 0 2 4	0 0 2 4 4								0 0 <mark>-</mark> 4 4 0 0 0
		00	Ø						······	17 17 X	-7 V
8.3 1 10.3 1 5.6 1 6.9 1 10.7 1 3.9 1											
10.3     1       5.6     1       6.9     1       10.7     1       3.9     1								10.3 5.6 6.9 10.7 3.6 3.6 14.4 19.7 19.7 3.6 7.6	10.3 5.6 6.9 10.7 3.9 3.6 3.6 14.4 19.7 3.6 3.6 3.6 19.7 8.1 8.1	10.3 5.6 6.9 10.7 3.6 3.6 14.4 14.4 19.7 3.6 19.7 3.6 8.1 8.1	10.3 5.6 6.9 10.7 3.9 3.6 3.6 14.4 19.7 3.6 19.7 8.1 8.1 8.1 0.9
0 1.4m 1/2 Frame 0 1.4m 2 Rung Ladder Frame 0 1.4m Walkthru' "H" Frame 0 1.4m Walkthru' Frame Gate	ID 1.4m 1/2 Frame ID 1.4m 2 Rung Ladder Frame ID 1.4m Walkthru' "H" Frame ID 1.4m Walkthru' Frame Gate ID 1.8m Brace	HD 1.4m 1/2 Frame HD 1.4m 2 Rung Ladder Frame HD 1.4m Walkthru' "H" Frame HD 1.4m Walkthru' Frame Gate HD 1.8m Brace HD 2.7m Brace	D 1.4m 1/2 Frame D 1.4m 2 Rung Ladder Frame D 1.4m Walkthru' "H" Frame D 1.4m Walkthru' Frame Gate D 1.8m Brace D 2.7m Brace D 1.8m x 3 Rung Brace (Blue)	0 1.4m 1/2 Frame 0 1.4m 2 Rung Ladder Frame 0 1.4m Walkthru' "H" Frame 0 1.4m Walkthru' Frame Gate 0 1.8m Brace 0 2.7m Brace 0 1.8m × 3 Rung Brace (Blue) 0 1.8m Platform	<ul> <li>0.1.4m 1/2 Frame</li> <li>0.1.4m 2 Rung Ladder Frame</li> <li>0.1.4m Walkthru' Frame Gate</li> <li>0.1.8m Brace</li> <li>0.2.7m Brace</li> <li>0.1.8m x 3 Rung Brace (Blue)</li> <li>0.1.8m Trap Platform</li> </ul>	0 1.4m 1/2 Frame 0 1.4m 2 Rung Ladder Frame 0 1.4m Walkthru' "H" Frame 0 1.4m Walkthru' Frame Gate 0 1.8m Brace 0 1.8m Prace 0 1.8m Platform 0 1.8m Platform 0 2.7m Platform	<ul> <li>HD 1.4m 1/2 Frame</li> <li>HD 1.4m 2 Rung Ladder Frame</li> <li>HD 1.4m Walkthru' "H" Frame Gate</li> <li>HD 1.4m Walkthru' Frame Gate</li> <li>HD 1.8m Brace</li> <li>HD 1.8m x 3 Rung Brace (Blue)</li> <li>HD 1.8m Trap Platform</li> <li>HD 1.8m Trap Platform</li> <li>HD 2.7m Platform</li> <li>HD 2.7m Timber Toeboard End</li> </ul>	HD 1.4m 1/2 Frame HD 1.4m 2 Rung Ladder Frame HD 1.4m Valkthru' "H" Frame HD 1.4m Walkthru' Frame Gate HD 1.8m Brace HD 1.8m Pace HD 1.8m 2 Rung Brace (Blue) HD 1.8m Zrap Platform HD 1.8m Trap Platform HD 1.8m Trap Platform HD 1.8m Treboard End HD 1.8m Toeboard Side - Linked Vers.	HD 1.4m 1/2 Frame HD 1.4m 2 Rung Ladder Frame HD 1.4m Walkthru' Frame Gate HD 1.4m Walkthru' Frame Gate HD 1.8m Brace HD 2.7m Brace HD 1.8m Zaung Brace (Blue) HD 1.8m Alatform HD 1.8m Trap Platform HD 1.8m Trap Platform HD 2.7m Platform HD 2.7m Platform HD 2.7m Toeboard Side - Linked Vers.	HD 1.4m 1/2 Frame HD 1.4m 2 Rung Ladder Frame HD 1.4m Walkthru' "H" Frame HD 1.4m Walkthru' Frame Gate HD 1.8m Brace HD 2.7m Brace HD 1.8m X 3 Rung Brace (Blue) HD 1.8m Trap Platform HD 1.8m Trap Platform HD 1.8m Troeboard End HD 2.7m Toeboard Side - Linked Vers. HD 2.7m Toeboard Side - Linked Vers. HD 2.7m Toeboard Side - Linked Vers.	HD 1.4m 1/2 Frame HD 1.4m 2 Rung Ladder Frame HD 1.4m Walkthru' "H" Frame HD 1.4m Walkthru' Frame Gate HD 1.8m Brace HD 1.8m S Rung Brace (Blue) HD 1.8m x 3 Rung Brace (Blue) HD 1.8m Trap Platform HD 1.8m Trap Platform HD 1.8m Trap State (Blue) HD 1.8m Trap State (Blue) HD 1.8m Trap State (Blue) HD 1.8m Trap State (Blue) HD 2.7m Toeboard Side - Linked Vers. HD 2.7m Toeboard Side - Linked Vers. HD 1.8m Timber Toeboard Side State HD 1.8m Toeboard Side - Linked Vers.
e 3.9	e 3.9 2.6	e 3.9 2.6 3.6	e 3.9 2.6 3.6 3.6 3.6	e 3:9 2.6 3.7 3.6 14.4	e 3:9 2.6 3.6 3.6 14.4 15	e 3.9 2.6 3.6 14.4 14.4 19.7	e 3:9 2.6 3.2 14.4 15 19.7	e 339 10.7 2.6 3.6 3.6 14.4 14.4 14.4 15 19.7 19.7 19.7 d 3.6 ed Vers. 7.6	e 339 2.6 3.6 2.6 14.4 14.4 19.7 19.7 19.7 ed Vers. 8.1	e 339 2.66 3.26 3.26 3.26 14.4 14.4 14.4 19.7 19.7 19.7 advers. 3.6 edvers. 3.6 edvers. 3.6	e 339 2.6 2.6 2.6 14.4 14.4 15 19.7 19.7 19.7 19.7 19.7 19.7 19.7 19.7 19.7 19.7 19.7 19.7 19.7 19.7 19.7 19.7 10.7
Gate 3.9	Gate 3.9 2.6	nu' Frame Gate 3.9 2.6 3.6	2.6 3.3 3.6 3.2	3.9 2.6 3.6 14.4	2.6 3.6 3.6 3.2 14.4 15	'Frame Gate     3.9       2.6     2.6       Brace (Blue)     3.2       14.4     15       form     15       form     19.7	'Frame Gate     3.9       2.6     2.6       Brace (Blue)     3.5       form     14.4       form     15       eboard End     3.6	'Frame Gate       3.9         2.6       2.6         Brace (Blue)       3.5         14.4       14.4         form       15         eboard End       3.6         stide - Linked Vers.       7.6	'Frame Gate       3.9         2.6       2.6         Brace (Blue)       3.5         14.4       14.4         form       15         form       15         eboard End       3.6         a Side - Linked Vers.       7.6         a Side - Linked Vers.       8.1	'Frame Gate       3.9         2.6       2.6         Brace (Blue)       3.5         114.4       14.4         form       15         d form       15         beboard End       3.6         d Side - Linked Vers.       7.6         d Side - Linked Vers.       8.1         oeboard Side       5	'Frame Gate     3.9       2.6     2.6       Brace (Blue)     3.5       14.4     1.4.4       form     1.5       form     1.5       form     3.5       beboard End     3.6       d Side - Linked Vers.     7.6       d Side - Linked Vers.     8.1       oeboard Side     5       beracket     0.9
	2.6	3.6	2.6 3.6 3.2	2.6 3.6 3.2 14.4	2.6 3.6 3.2 14.4 15	2.6       2.6       3.6       Brace (Blue)       3.2       14.4       16.7       19.7	2.6         2.6         Brace (Blue)         3.2         14.4         14.4         15         15         eboard End         3.6	2.6       Brace (Blue)     3.6       Brace (Blue)     3.2       form     14.4       form     15       beboard End     3.6       stide - Linked Vers.     7.6	2.6       Brace (Blue)     3.6       Brace (Blue)     3.2       form     14.4       form     15       form     15       eboard End     3.6       at Side - Linked Vers.     7.6       at Side - Linked Vers.     8.1	2.6       Brace (Blue)     3.6       Brace (Blue)     3.2       14.4     14.4       form     15       form     15       beboard End     3.6       d Side - Linked Vers.     7.6       d Side - Linked Vers.     8.1       oeboard Side     5	2.6       2.6         Brace (Blue)       3.6         Brace (Blue)       3.2         form       14.4         form       15         form       15         form       3.5         form       15         form       3.6         aboard End       3.6         aboard End       3.6         aboard End       3.6         aboard End       3.6         aboard Side       5.

### Double width bridge tower assembly using 1.8m towers & 2.7m link decks.

This schedule shows the parts required for each bay of bridge tower structures for the heights shown. Each structure is defined as a starter tower with any number of additional bays. Counting from the starter tower as "1", bays will either be even or odd numbers. The end bay will always be an odd number and the relevant part changes are shown to produce the correct end configuration.

			3.4m	Im Platform Height	n Heigł	ıt	5.4m Platform Height	atform	Height	7.4	7.4m Platform Height	orm He	ight	9.4m Pl	9.4m Platform Height	Height	11.4	m Platf	11.4m Platform Height	eight
CODE	PART DESCRIPTION	Wt	Start Tower	Even Bay	Odd E Bay E	End S Bay T	Start Evo Tower Ba	Even Odd Bay Bay	dd End ay Bay	d Start y Tower	t Even ir Bay	Odd Bay	End Bay	Start Ev Tower B	Even O Bay B	Odd End Bay Bay	Start Tower	Even Bay	Odd Bay	End Bay
2233	HD Adj. Swivel Base Jack	2.1	4		4		4			4		4		4	•••••		4		4	
2001	HD 1.4m Base Frame	12.9	~		 					~		— 		~			~		— 	
2212	HD 1.4m 5 Rung Ladder Frame	15.5		•••••					•••••	~	•••••	 					~			
2002	HD 1.4m Main Frame	10.9	•••••	•••••	•••••				•••••	2	•••••	5		 M	•••••		4			
2213	HD 1.4m 4 Rung Ladder Frame	13.8		•••••	•••••	~	5	•••••		m	•••••	5	—	4	•••••		ß		4	
2009	HD 1.4m Walkthru' "H" Frame	10.7		••••	5	<u>,</u>					•••••	5	<u>,</u>		••••	-1 -1	~		5	<u>,</u>
2010	HD 1.4m Walkthru' Frame Gate	3.9		•••••		<u>,</u>				~	•••••	5	<u>,</u>				~		5	<u>,</u>
2040	HD 1.8m Brace	2.6		•••••			15	- <u>-</u> '		19	•••••	19		23		23	27		27	
2041	HD 2.7m Brace	3.6	4	∞	4		9	0 		∞	10	∞		2	10	10	12	9	12	
2043	HD 1.8m Platform	14.4	~	•••••	7	<u>,</u>				~	•••••	5	<u>,</u>			2	~		7	<u>,</u>
2044	HD 2.7m Platform	19.7		5				5	•••••		5					•••••		~		
2201	HD 1.8m Trap Platform	15	7	•••••		~	 M			4	•••••		—	ъ	•••••	4 	9		<u>ں</u>	
2071	HD D/W Timber Toeboard End	3.6		•••••	•••••	~		•••••		~	•••••	•••••	— 				~			
2086	HD 1.8m Toeboard Side - Linked Vers.	7.6	•••••	•••••	5		••••				•••••	5			••••				5	
2087	HD 2.7m Toeboard Side - Linked Vers.	8.1		5		_			•••••		5				5	•••••		~		
2069	HD 1.8m Timber Toeboard Side	Ω	7	•••••	•••••		5	•••••	•••••	2	•••••			5	•••••	••••	2			
2074	HD Toeboard Corner Bracket	6.0	2			2	5		5	2			7	5		5	2			2
2079	HD Toeboard Inline Socket	0.5	2	5	2	-2	2 2	5	2	2	5	5	-7	2	5	2 -2	2	5	5	-2

### Build Method 'D'

398: 4

6

398

4

341

93

341

4

93 : 284

284

: 226 : 4

226 : 85

: 169

169 : 85

TOTAL SELF WEIGHT OF TOWER (KGS)

End Bay

Odd Bay

Even Bav

Start Fower

End Bav

Odd Bav

Even Bav

Start Tower

End Bav

Odd Bay

Even Bay

Start Tower

End Bav

Odd Bav

Even Bav

Start Tower

End Bav

Odd Bav

Even Bav

Start Tower

PART DESCRIPTION

12.9 15.5 10.9 13.8

2.1

HD Adj. Swivel Base Jack

2233 2001

HD 1.4m Base Frame

12.4m Platform Height

10.4m Platform Height

8.4m Platform Height

6.4m Platform Height

4.4m Platform Height

### Double width bridge tower assembly using 2.7m towers & 2.7m link decks.

**Build Method 'A'** 

This schedule shows the parts required for each bay of bridge tower structures for the heights shown. Each structure is defined as a starter tower with any number of additional bays. Counting from the starter tower as "1", bays will either be even or odd numbers. The end bay will always be an odd number and the relevant part changes are shown to produce the correct end configuration

				-			<u>,</u>	<u>,</u>				5	-	—			2	-2
4	~	-	4	4	-	~	2	7							5			2
	••••														5			7
4	~		4	Ś											•••••			2
				~			<u>,</u>	<u>,</u>				<u>,</u>	~	~			2	-2
4	~	~	m	m											7			7
••••		•••••					•••••		10	•••••		7		•••••	7	•••••		7
4	-	-	m	4						10	2	-	ß	~		2	7	2
				~			<u>,</u>	<u>,</u>				<u>,</u>	~	-			2	-2
4	~	~	7	7	-	~	7								7			7
																		7
4	~		7	m	-	-	-	~	19	00	2	~	4	~		7	7	2
				-			<u>,</u>	<u>,</u>				<u>,</u>	-	~			2	-2
4	~	~	~	~	~	~	7	7	15	9	7	7	7		2			2
									00			7			7			7
4	-		-	7	-	-	-	-	15	9	7	-		←		7	7	2
				-			<u>,</u>	<u>,</u>				<u>,</u>	~	-			2	-2
4	~	~			~	~	7	2	2	4	~	7	~		7			7
							•••••		∞	•••••		7				•••••		2
4	~			-	~	~		-		4	7	-	7	~		7	7	2

10.7

3.9 3.6 4.4 4.1

HD 1.4m Walkthru' Frame Gate

HD 2.7m Brace HD 3.3m Brace

> 2042 2083 2044 2202 2071 2087

5.6 6.9

HD 1.4m 4 Rung Ladder Frame

2213 2008 2215 2009 2010 2041

HD 1.4m 1/2 Frame

HD 1.4m 2 Rung Ladder Frame

HD 1.4m Walkthru' "H" Frame

HD 1.4m 5 Rung Ladder Frame

2212

HD 1.4m Main Frame

2002

20.4 19.7

HD 2.7m x 3 Rung Brace (Black)

3.6 <u>~</u>. 7.8

HD 2.7m Toeboard Side - Linked Vers.

HD D/W Timber Toeboard End

HD 2.7m Trap Platform

HD 2.7m Platform

HD 2.7m Timber Toeboard Side

2070 2074

HD Toeboard Corner Bracket

294  $\sim$ V 4 2 .. 221  $\sim$ . . . . . 85  $\sim$ .... 226  $\sim$ TOTAL SELF WEIGHT OF TOWER (KGS) 0.9 0.5 HD Toeboard Inline Socket 2079

4

: 494

63

499

4

: 426

63

431

4

358

63

362

4

289

85

•••

### Double width bridge tower assembly using 2.7m towers & 2.7m link decks

			4.9m	4.9m Platform Height	m Heig	ţţţ	6.9m P	latforn	6.9m Platform Height	<b>1</b> 6.8	8.9m Platform Height	orm Hei	ight	10.9m	ו Platfo	10.9m Platform Height	ght
CODE	PART DESCRIPTION	Wt	Start Tower	Even Bay	Odd Bay	End Bay	Start E Tower E	Even C Bay E	Odd End Bay Bay	Start Tower	Even Bay	Odd Bay	End Bay	Start Tower	Even Bay	Odd Bay	End Bay
2233	HD Adj. Swivel Base Jack	2.1	4	•••••	4		4	•••••		4		4		4		4	
2001	HD 1.4m Base Frame	12.9	·····	•••••	·····					~				~		~	
2212	HD 1.4m 5 Rung Ladder Frame	15.5	~	•••••	••••••			•••••		~				~			
2002	HD 1.4m Main Frame	10.9	•••••	•••••	•••••			•••••		2		7		m		m	
2213	HD 1.4m 4 Rung Ladder Frame	13.8	·····	•••••	•••••	~		•••••	 	m		7		4		m	~
2006	HD 1.4m 3/4 Frame	8.3	~	•••••				•••••		~	•••••			~		~	
2214	HD 1.4m 3 Rung Ladder Frame	10.3	~~	•••••						~				~			
2009	HD 1.4m Walkthru' "H" Frame	10.7	~~~		5	<u>,</u>		•••••	2	~		~		~		7	<u>,</u>
2010	HD 1.4m Walkthru' Frame Gate	3.9	·····	•••••	7	<u>,</u>				~		~	<u>,</u>	~		7	<u>,</u>
2041	HD 2.7m Brace	3.6	12	 ∞	12		16	 ∞		20		50		24	10	24	
2042	HD 3.3m Brace	4.4	4	•••••	4			•••••		∞		∞		10		10	
2083	HD 2.7m x 3 Rung Brace (Black)	4.1	~~~	•••••	~~~			•••••		2		~		7		~~~	
2044	HD 2.7m Platform	19.7	·····	5	5	<u>,</u>				~		7	<u>,</u>	~	7	7	<u>,</u>
2202	HD 2.7m Trap Platform	20.4			••••••	~	 M	•••••	 	4			~	5		4	~
2071	HD D/W Timber Toeboard End	3.6		•••••	•••••	~		•••••	 	~				~	•••••	•••••	~
2087	HD 2.7m Toeboard Side - Linked Vers.	8.1		~							~	2			7	7	
2070	HD 2.7m Timber Toeboard Side	7.8	5	•••••	•••••		5			2				2		•••••	
2074	HD Toeboard Corner Bracket	6.0	5	•••••	•••••	2	5	•••••	5		•••••		2			•••••	2
2079	HD Toeboard Inline Socket	0.5	2	2	2	-2	2	2	2 : -2	2	5	2	-2	2	2	2	-2
	TOTAL SELF WEIGHT OF TOWER (KGS)	(SDX)	235	85	231	4	304	85 : 2	299 5 4	370	. 93	367	4	438	63	436	4

### Double width bridge tower assembly using 2.7m towers & 2.7m link decks.

Build Method 'C'

			5.9m	Platfor	5.9m Platform Height	يد بر	7.9m P	latforn	7.9m Platform Height	t t	9.9m P	latforr	9.9m Platform Height		11.9m Platform Height	atforn	n Heigl	Ħ
CODE	PART DESCRIPTION	Wt	Start Tower	Even Bay	Odd Bay	End Bay T	Start E Tower I	Even ( Bay	Odd I Bay I	End Bay T	Start E Tower	Even Bay	Odd E Bay B	End Si Bay To	Start Ev Tower Bi	Even C Bay E	Odd Bay	End Bay
2233	HD Adj. Swivel Base Jack	2.1	4	•••••	4		4	•••••	4		4	•••••	4			•••••	4	
2001	HD 1.4m Base Frame	12.9	·····	•••••	·····			•••••	·····		·····	•••••				•••••	·····	
2212	HD 1.4m 5 Rung Ladder Frame	15.5		•••••				•••••				•••••				•••••	•••••	
2002	HD 1.4m Main Frame	10.9	•••••	•••••	•••••			•••••			~	•••••	~			•••••	 m	
2213	HD 1.4m 4 Rung Ladder Frame	13.8	·····	•••••	•••••	~	5	•••••		~	m	•••••	7	~		•••••	 m	~
2006	HD 1.4m 3/4 Frame	8.3		•••••	 ←			•••••	 ~			•••••					·····	
2214	HD 1.4m 3 Rung Ladder Frame	10.3	·····	•••••				•••••	 ~			•••••				•••••	•••••	
2008	HD 1.4m 1/2 Frame	5.6	·····	•••••			·····	•••••	 ~			•••••			·····		·····	
2215	HD 1.4m 2 Rung Ladder Frame	6.9	·····	•••••	·····		·····	•••••	 ~			•••••				•••••	•••••	
2009	HD 1.4m Walkthru' "H" Frame	10.7	·····	•••••		5		•••••		<u>,</u>				<u> </u>				<u>,</u>
2010	HD 1.4m Walkthru' Frame Gate	3.9	·····	•••••	~~~	<u>,</u>	·····	•••••		<u>,</u>		•••••		<u>,</u>		•••••		<u>,</u>
2041	HD 2.7m Brace	3.6	 12	∞	12		16		16		20		20		24	10	54	
2042	HD 3.3m Brace	4.4	4	•••••	4		9	••••	9		∞	•••••	∞		10	•••••		
2083	HD 2.7m x 3 Rung Brace (Black)	4.1	4	•••••	4		4	••••	4		4	••••	4			••••		
2044	HD 2.7m Platform	19.7		5		<u>,</u>	·····			<u>,</u>			5	<u>,</u>				<u>,</u>
2202	HD 2.7m Trap Platform	20.4	 M	•••••	~~~	~	4	•••••	 M	~		•••••	4		 9	•••••		~
2071	HD D/W Timber Toeboard End	3.6	·····	•••••	•••••	~	·····	•••••	•••••	~	·····	•••••	•••••			•••••	•••••	~
2087	HD 2.7m Toeboard Side - Linked Vers.	8.1	•••••	~	~~~		•••••	~~~			•••••		2		•••••			
2070	HD 2.7m Timber Toeboard Side	7.8	5	•••••	•••••		5	•••••	•••••		7	•••••	•••••		5	•••••	•••••	
2074	HD Toeboard Corner Bracket	6.0	5			2	5			2	5			5				2
2079	HD Toeboard Inline Socket	0.5	2	2	2	-2	2	2	2	-2	2	2	2	-2	2	2	2	-2
	TOTAL SELF WEIGHT OF TOWER (KGS)	(GS)	276	85	272	4	345	 66	340	4	413	 63	408	4 4	481 : 9	93 : 4	477	4

### Double width bridge tower assembly using 2.7m towers & 2.7m link decks.

COIS         Dart DESCRIPTION         W         Town         Eval				3.4m	3.4m Platform Height	m Heigl	<del>ب</del> ا	5.4m P	latform	5.4m Platform Height		'.4m Plå	7.4m Platform Height	Height		9.4m Platform Height	atform	Height		.4m Pl	11.4m Platform Height	Height	
HD Adj Swiel Base Jack       21       4 <th>CODE</th> <th></th> <th>Wt</th> <th>Start Tower</th> <th>Even Bay</th> <th></th> <th>End Bay</th> <th></th> <th></th> <th></th> <th>· ·</th> <th></th> <th></th> <th></th> <th>· ·</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>b V</th>	CODE		Wt	Start Tower	Even Bay		End Bay				· ·				· ·								b V
HD 14m Base Frame       129       1	2233		2.1	4		4		4			7								4			•••••	
HD 14m Stangladder Frame         15         1 <th1< th="">         1         1<td>2001</td><td></td><td>12.9</td><td>·····</td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td>·····</td><td></td><td></td><td></td><td></td><td>•••••</td><td>·····</td><td>~</td><td></td><td></td><td></td><td></td></th1<>	2001		12.9	·····							-	·····					•••••	·····	~				
HD 1.4m Main Frame         103         103         1         1         2         2         3         3         4         4         3         4         3         4         3         4         3         4         3         4         3         1         5         4         3         4         3         1         5         4         3         4         3         1         5         4         3         4         3         1         5         4         3         4         3         1         5         4         4         3         1         5         4         4         3         1         5         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         1         1         1 <th1< th="">         1         2         1</th1<>	2212		15.5	~	•••••	·····			•••••		<u> </u>		•••••	•••••			•••••	·····	~	••••	 	•••••	
HD 1.4m 4 Rung Ladder Frame         138         1         2         1         3         2         1         4         3         1         5         4           HD 1.4m Walkthru <sup>*</sup> H <sup>*</sup> Frame         10.7         1         2         -1         1         2         -1         1         2         -1         1         2         -1         1         2         -1         1         2         -1         1         2         -1         1         1         2         -1         1         1         2         -1         1         2         -1         1         2         -1         1         2         -1         1         2         -1         1         2         -1         1         2         -1         1         2         -1         1         2         2         -1         1         2         2         1         1         2         2         1         1         2         2         1         1         2         2         1         1         2         2         1         1         2         2         1         1         2         2         1         1         1         1         1         1	2002		10.9		•••••						(N			·····		 m	••••		4		•••••		
HD 1,4m Walkthur "H: Frame         107         1         2         -1         1         2         1         1         2         1         1         2         2         1         1         2         2         1         1         2         2         1	2213		13.8		•••••	•••••	~	5	•••••				•••••	•••••			••••	•••••		•••••	•••••	•••••	
HD 1.4m Walkthruf Frame Gate         39         1         2         -1         1         2         -1         1         2         -1         1         1         2         -1         1         1         2         -1         1         1         2         -1         1         1         2         -1         1         1         2         -1         1         1         2         -1         1         2         -1         1         2         -1         1         2         2         -1         1         2         2         1         2         2         1         2         2         1         1         2         2         1         1         2         2         1         1         2         2         1         1         2         2         1         1         2         2         1         1         2         2         1         1         2         2         2         1	2009		10.7	·····			<u>,</u>			•••••	-	·····			~			•••••	-			·····	_
HD 2.7m Brace         36         11         8         11         15         15         16         15         16         15         16         17         16         27         10         27         10         27         10         27           HD 3.3m Brace         44         4         4         4         4         4         4         4         4         4         12         1	2010		3.9	·····	•••••		<u>,</u>	·····	•••••	•••••	-		•••••	•••••	~		•••••	•••••	-	•••••	•••••	•••••	_
HD 3.3m Brace         4.4         6         6         8         8         10         10         10         12         12         2         2           HD 2.7m Platform         19.7         1         2         2         1         1         2         2         1         1         2         2         1         1         2         2         1         1         2         2         1         1         2         2         1         1         1         1         1         2         2         1	2041		3.6		∞			15	 ∞	15	<u>~</u>	•••••			, 1		 0	 m	27	•••••	•••••		
HD 2.7m Platform       19.7       1       2       2       -1       1       2       2       -1       1       2       2       -1       1       2       2       2       1       1       2       2       2       1       1       2       2       2       1       1       2       2       2       1       1       2       2       2       1       1       2       2       2       1       1       2       2       1       1       2       2       1       1       2       2       1       1       2       2       1       1       2       2       1       1       1       2       3       1 <td>2042</td> <td></td> <td>4.4</td> <td>4</td> <td>•••••</td> <td>4</td> <td></td> <td>9</td> <td>•••••</td> <td>9</td> <td>ω</td> <td></td> <td>•••••</td> <td>·····</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	2042		4.4	4	•••••	4		9	•••••	9	ω		•••••	·····									
HD 2.7m Trap Platform       20.4       2       1       1       3       1       4       1       6       5         HD D/W Timber Toeboard End       3.6       1       1       1       1       1       1       6       5         HD D/W Timber Toeboard End       3.6       1       2       2       2       2       2       1	2044		19.7	·····			<u>,</u>			•••••		•••••	•••••	•••••			•••••	•••••	-	•••••	•••••		_
HD D/W Timber Toeboard End         3.6         1	2202		20.4	5	•••••	·····	~	m	•••••	•••••			•••••				•••••	•••••		•••••	ى. 	•••••	
HD 2.7m Toeboard Side - Linked Vers.       8.1       2	2071		3.6				~			•••••	-		•••••	•••••				•••••	-	••••			
HD 2.7m Timber Toeboard Side 7.8 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2087		8.1		7	5		•••••					•••••					•••••				•••••	
HD Toeboard Corner Bracket           0.9         2 <td< td=""><td>2070</td><td></td><td>7.8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>(N</td><td></td><td></td><td></td><td></td><td>•••••</td><td></td><td></td><td></td><td></td><td>•••••</td><td></td><td></td></td<>	2070		7.8								(N					•••••					•••••		
HD Toeboard Inline Socket 0.5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2074		6.0	5	•••••	•••••	2	5	•••••	•••••			•••••	•••••	0		•••••	•••••		•••••	•••••		
205       85       200       4       273       84       269       4       342       93       337       4       394       93       389       4       463       93       457	2079		0.5	2	2	2	-2	2	5			•••••	•••••		2	•••••	•••••	•••••			•••••	•••••	
		TOTAL SELF WEIGHT OF TOWER (	(KGS)	205	•••••	200	4														•••••		

### **ASSEMBLY INSTRUCTIONS - All Platform Working Heights**

#### Step 1

Insert the base jacks into the base of the 5 Rung Base Frame and 5 Rung Ladder Frame. Ensure the springloaded pin is engaged into the hole in the side of the frame uprights.

This is the starting bay of the tower. Ensure that it is correctly located at one end of the intended position for the deployed tower structure.

#### Step 2

Connect 2 horizontal braces to the uprights of the first frame in the area just above the bottom rung. Make sure that the braces are connected from the inside of the tower facing outwards. Make sure that the frame head fittings are pointing inwards into the tower.

#### Step 3

Connect the 2nd frame to the horizontal braces in the same position that they are located on the first frames. Ensure that the braces are at the lowest part of the upright - resting on the horizontal rungs for the frame, and the frame head fittings are pointing inwards into the tower.









Connect 2 standard diagonal braces to the frames as shown. Keep the diagonal braces as close to the frame uprights as possible. Ensure that they run in opposite directions to each other. Now square the tower and level using a spirit level by twisting the serrated collar on the base jack to adjust the height of each leg.

#### Step 5

Install 2 horizontal braces onto the top rungs of the frames. Make sure they are positioned inside of the diagonal braces but as close to the diagonal brace as possible.

#### Step 6

Install a trap platform on the 3rd rung up, with the trapdoor at the same end as the ladder frame. Engage the wind latches on the underside of the platform at both ends. Using either the 3T method or from the ground, clip on 3 more horizontal braces in the positions shown - to give the platform a total of 4 horizontal guardrails.

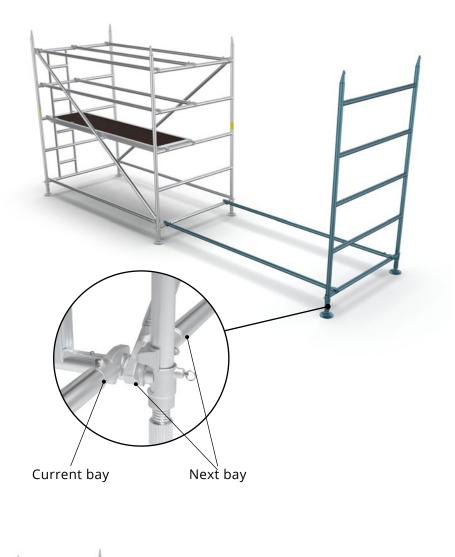
Connect another plain frame and base jacks to the existing tower's plain frame using 2 horizontal braces clipped on the bottom horizontal rungs. Make sure the frame is orientated as shown with the conical head castings pointing away from the first tower. Make sure there is enough room on the new frame between the new brace hook and the frame upright to fit a diagonal brace and another horizontal brace when assembling the next bay - see zoomed in image.

One person should hold the new frame to stop it falling until the next stage is in progress.

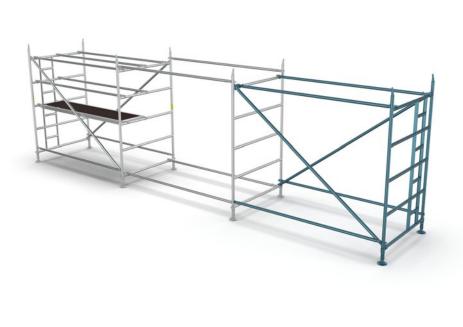
#### Step 8

Connect 2 horizontal braces to the frame uprights at the top of the frames as shown.

Level this second bay using a spirit level on the bottom horizontal braces in this bay. Ensure that the framework is completely level by adjusting the legs on the 3rd frame only. Twist the serrated collar to adjust the height of the frame. Ensure that all feet are fully grounded. Levelling is crucial for all advanced tower structures.









Add another bay of framework by repeating Steps 2-5. Ensure the ladder frame is orientated correctly and the bottom horizontal braces are clipped onto the frame uprights.

Now square the tower and level using a spirit level by twisting the serrated collar on the base jack to adjust the height of each leg.

#### Step 10

Install a trap platform on the 3rd rung up, with the trapdoor at the same end as the ladder frame. Engage the wind latches on the underside of the platform at both ends. Using either the 3T method or from the ground, clip on 3 more horizontal braces in the positions shown - to give the platform a total of 4 horizontal guardrails.

Repeat Steps 7-10 until the required length of tower has been created.

NOTE: Steps 11 onwards show only three bays for clarity only.

### Build Method A 4.4m, 6.4m, 8.4m

#### Step 11.1

Working from the temporary platforms in the tower bays, install a 2 rung main frame & a 2 rung ladder frame in each bay. Ensure the ladder frames are installed on the existing ladder frames and that head fittings are pointing inwards into the middle of the bay.



#### Step 11.2

Now, install two coloured diagonal braces (blue or black) onto the top rungs of the newly installed frames as shown. The other end of the brace connects to the 3rd rung down on the opposite side.

Diagonal braces always run in a parallel direction to the diagonal braces below. The diagonal braces on the tower should be as close to the frame uprights as possible.





#### Step 11.3

Relocate the platforms and 4 guardrails up 2 rungs using the 3T method. Ensure the trap door is located next to the ladder and that the wind latches are fully engaged.

If a 4.4m tower is being assembled, proceed to Step 16

If a 6.4m or 8.4m tower is being assembled, proceed to Step 13

### Build Method B 4.9m, 6.9m

#### Step 11.1

Working from the temporary platforms, install a 3 rung main frame & a 3 rung ladder frame in appropriate positions onto the base frames. Then, clip 2 coloured diagonal braces (blue or black) onto the top rungs as shown. The other end of the brace connects to the 3rd rung down on the opposite side. Diagonal braces always run in a parallel direction to the diagonal braces below.



#### Step 11.2

Using the 3T method, relocate the platforms and guardrails down one rung.





#### Step 11.3

Now add an additional horizontal brace above the outside 2 horizontal braces - on the top rung of the base frames.

#### Step 11.4

Install a trap platform 4 rungs above the previous platform. Ensure the trap door is located next to the ladder and that the wind latches are fully engaged. Using the 3T method, install 4 guardrails to each of the platforms. The temporary platform and guardrails at the base of the tower can now be removed.

If a 4.9m tower is being assembled, proceed to Step 16

If a 6.9m tower is being assembled, proceed to Step 13

### Build Method C 5.9m, 7.9m

#### Step 11.1

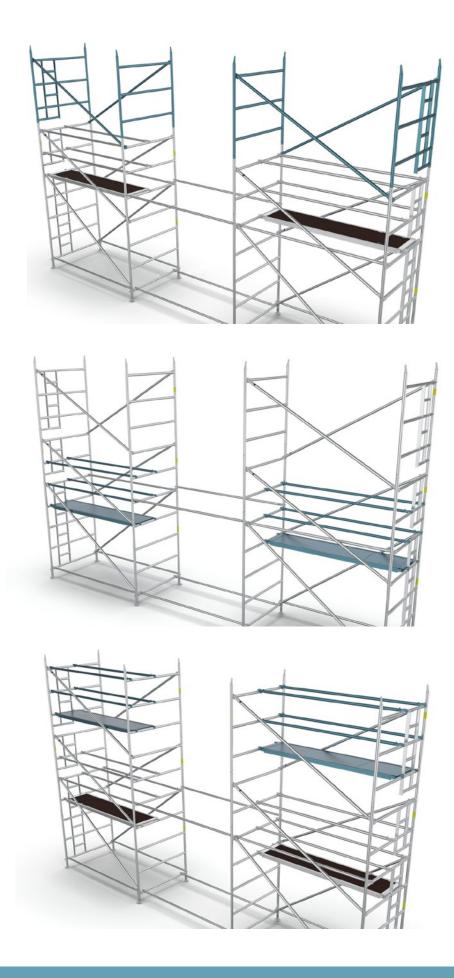
Working from the temporary platforms in the tower bays, install a 2 rung main frame & a 2 rung ladder frame in appropriate positions onto the base frames. Then, clip 2 coloured diagonal braces (blue or black) onto the top rungs as shown. The other end of the brace connects to the 3rd rung down on the opposite side. Diagonal braces always run in a parallel direction to the diagonal braces below. The diagonal braces on the tower should be as close to the frame uprights as possible.



#### Step 11.2

Relocate the platforms and 4 guardrails up 2 rungs using the 3T method. Ensure the trap door is located next to the ladder and that the wind latches are fully engaged.





#### Step 11.3

Install a 3 rung main frame & a 3 rung ladder frame in appropriate positions onto the 2 rung frames. Then, clip 2 coloured diagonal braces (blue or black) onto the top rungs as shown. The other end of the brace connects to the 3rd rung down on the opposite side. Diagonal braces always run in a parallel direction to the diagonal braces below.

#### Step 11.4

Relocate the platform and the 4 guardrails down one rung using the 3T method. Ensure the trap door is located next to the ladder and that the wind latches are fully engaged.

#### Step 11.5

Working from this new location, install a trap platform 4 rungs above. Ensure the trap door is located next to the ladder and that the wind latches are fully engaged. Now using the 3T method, install 4 guardrails.

If a 5.9m tower is being assembled, proceed to Step 16

If a 7.9m tower is being assembled, proceed to Step 13

### Build Method D 3.4m, 5.4m, 7.4m

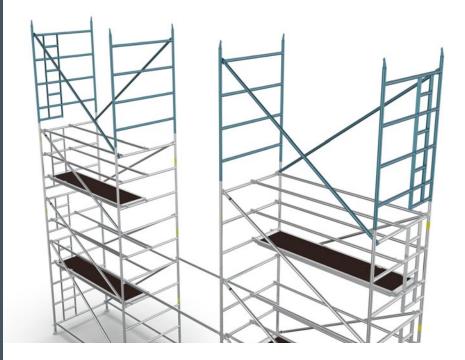
If a 3.4m tower is being assembled, go straight to Step 16.

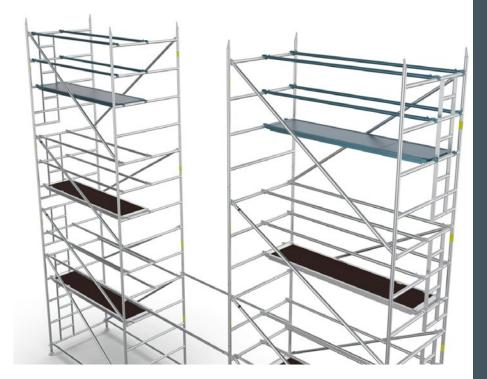
If a 5.4m or 7.4m tower is being assembled, go to Step 13.

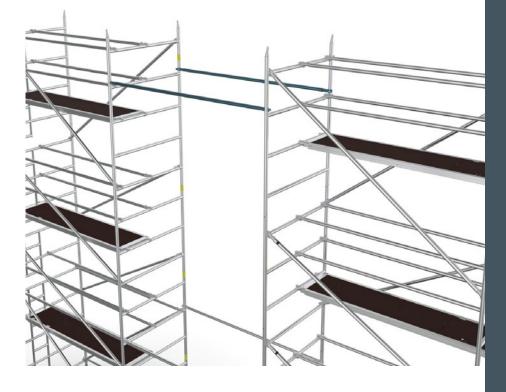
### **ASSEMBLY INSTRUCTIONS CONTINUED - All Methods**

#### Step 12

Install a 4 rung main frame & a 4 rung ladder frame in appropriate positions onto the current framework. Then, clip 2 standard diagonal braces (2.7m or 3.3m) onto the top rungs as shown. The other end of the brace connects to the 4th rung down on the opposite side. Diagonal braces always run in a parallel direction to the diagonal braces below.







Install a trap platform 4 rungs above. Ensure the trap door is located next to the ladder and that the wind latches are fully engaged. Now using the 3T method, install 4 guardrails.

Repeat Steps 13 & 14 until the top platform is 2m below (one level below) the final working platform.

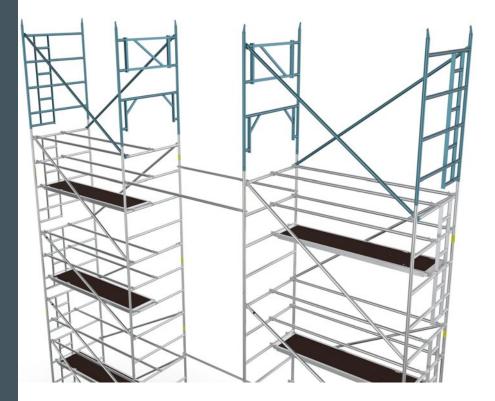
At this level, install the chosen tying in method. Ensure the tyingin pattern is followed once each subsequent level is built (see page 10).

#### Step 14

If assembling a bridge tower to 7.4m or higher, install 2 horizontal braces in the bridge bay to connect the 2 towers together. This should be located 8 rungs above the previous horizontal braces in the same bay as shown.

Repeat this step two lifts (8 rungs) higher if building the tower to more than 11.4m working platform height.

Finally, install the top level. Connect a 4 rung Ladder Frame and a Walkthrough 'H' Frame & Gate onto the current framework of each tower. The 'H' Frames go on top of the plain frames. Ensure the Gate is installed into the 'H' Frame before connecting it to the tower. Now, clip 2 standard diagonal braces (2.7m or 3.3m) onto the top rungs as shown. The other end of the brace connects to the 4th rung down on the opposite side. Diagonal braces always run in a parallel direction to the diagonal braces below.

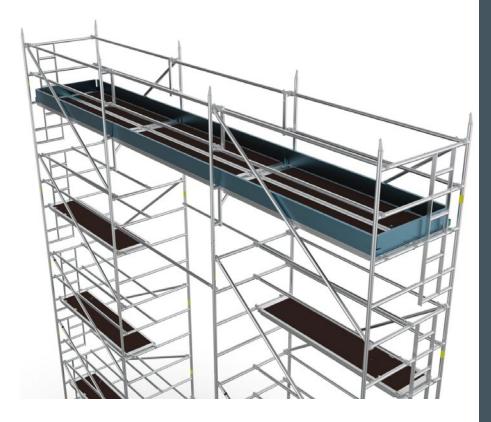


#### Step 16

Install a trap platform and plain platform 4 rungs above the current platforms. Ensure the trap door is located next to the ladder and that the wind latches are fully engaged. Now using the 3T method, install 4 guardrails to each set of platforms.







Working from the new topmost platforms in two adjacent Tower Bays, install two plain platforms into the Bridge Bay. Ensure the wind latches are fully engaged. Now, install four guardrails into the Bridge Bay, as shown. These clip onto the small horizontal stubs on the Walkthrough Frames.

Once the guardrails are all fitted, the Walkthrough Frame Gate can be removed.

#### Step 18

Finally, install the Toeboard Brackets and Toeboards to the entire working platform.

Each side run of toeboards consist of 1 x standard length toeboard (2069 or 2070) and the rest should be the Linked Versions (2086 or 2087).

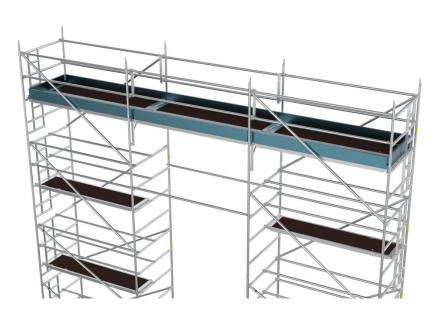
### **DISMANTLING INSTRUCTIONS - All Platform Working Heights**

The dismantling procedure is the reverse of the assembly procedure and requires a minimum of 4 operatives to complete the task safely. Particular points which must be followed during the dismantling include the following:

- Do not remove stabilisers from the structure until the dismantling process has removed all frames above the base level.
- Remove the toeboard assembly from all working platform levels before removing that level of the tower.
- If the tower is tied in, only remove the the tying in that is level with the uppermost tier of the tower in order to facilitate removing that level.
- NEVER STAND ON AN UNGUARDED PLATFORM.

#### Step 1

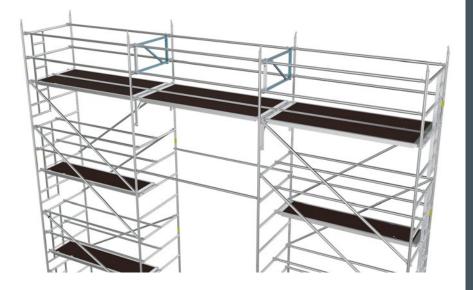
The dismantling procedure requires a minimum of 4 operatives to complete the task safely. To start, first remove the toeboard assembly from all working platform levels.

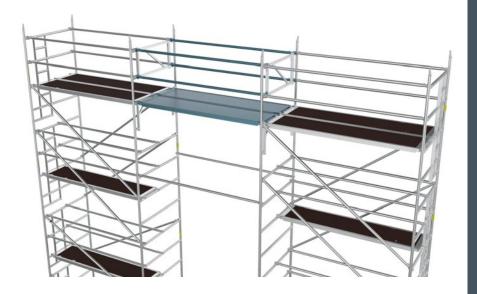


#### Step 2

Starting at one end of the structure relocate the diagonal braces in "odd" bays downwards so the top hook is located on the same rung as the uppermost platform, as shown. This can be done by using one operative on the top platform and one operative on the platform underneath.









Replace gates into the walkthrough 'H' frames and work from "odd" tower bays only from this point onwards.

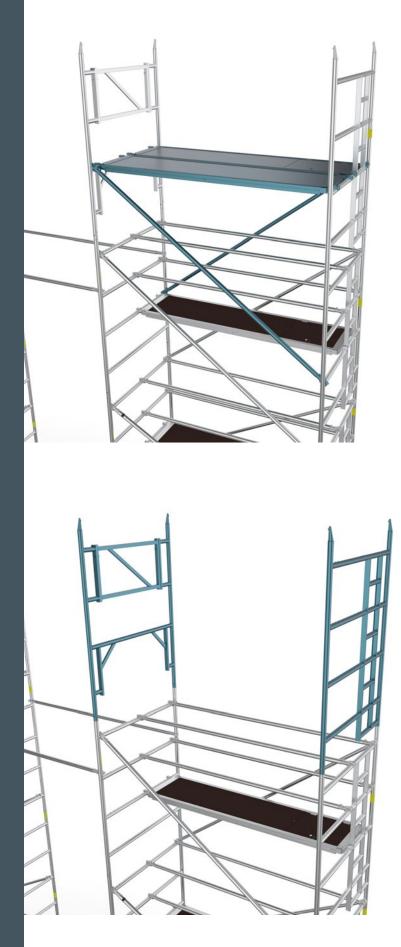
#### Step 4

Working from "odd" bays remove guardrails and platforms from the " even" Bridge bays.

#### Step 5

In each "odd" bay remove the 4 guardrails. To remove braces or guardrails, first disconnect each brace at the end furthest away from the platform trap door. Then immediately take up the protected position detailed in the 3T method. Whilst standing through the trapdoor as per the 3T method, disconnect the braces completely.

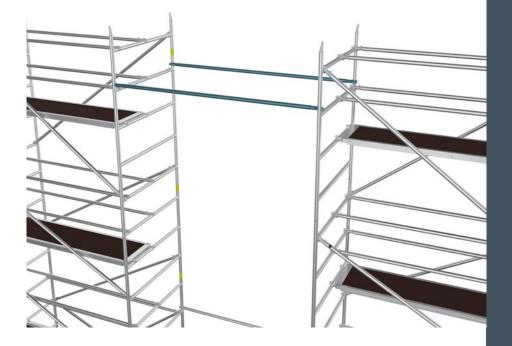
Now, working from the platform below, the upper platform(s) can be removed. Now, the recently relocated diagonal brace(s) can now be taken off. This can be done by one operative from the platform.



#### Step 7

Remove the tying in method **from this level only**. Now, remove the 2 frames off the top of the tower.

Repeat steps 2, 5 and 6 working down the tower until the tower is dismantled. Ensure the tying in method is only removed for the current level when it is reached.



Using an operative on each tower, remove the horizontal ties connecting the 2 towers together when that particular level is reached.

Now repeat steps 2 to 8, working down the tower until the structure is dismantled.

## Components







2001 1.4m Base Frame





2002 1.4m Main Frame

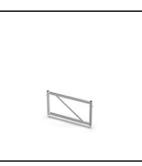
2006 1.4m 3/4 Frame



2008 1.4m 1/2 Frame



**2009** 1.4m Walkthrough Frame



**2010** 1.4m Walkthrough Frame Gate



**2212** 1.4m 5 Rung Ladder Frame



**2213** 1.4m 4 Rung Ladder Frame



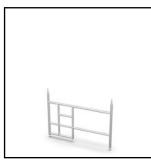
2041 2.7m Brace



**2214** 1.4m 3 Rung Ladder Frame



2042 3.3m Brace



**2215** 1.4m 2 Rung Ladder Frame



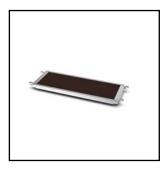
**2080** 1.8m x 3 Rung Brace (Blue)

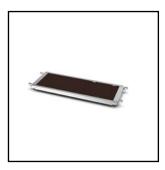


2040 1.8m Brace



**2083** 2.7m x 3 Rung Brace (Black)









2043 1.8m Plain Platform

2201 1.8m Trap Platform

2044 2.7m Plain Platform

2202 2.7m Trap Platform



**2069** 1.8m Timber Toeboard Side



**2070** 2.7m Timber Toeboard Side



**2071** D/W Timber Toeboard End



**2086** 1.8m Timber Toeboard Side - Linked



**2087** 2.7m Timber Toeboard Side - Linked



**2074** Timber Toeboard Corner Bracket



**2079** Timber Toeboard Inline Bracket



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