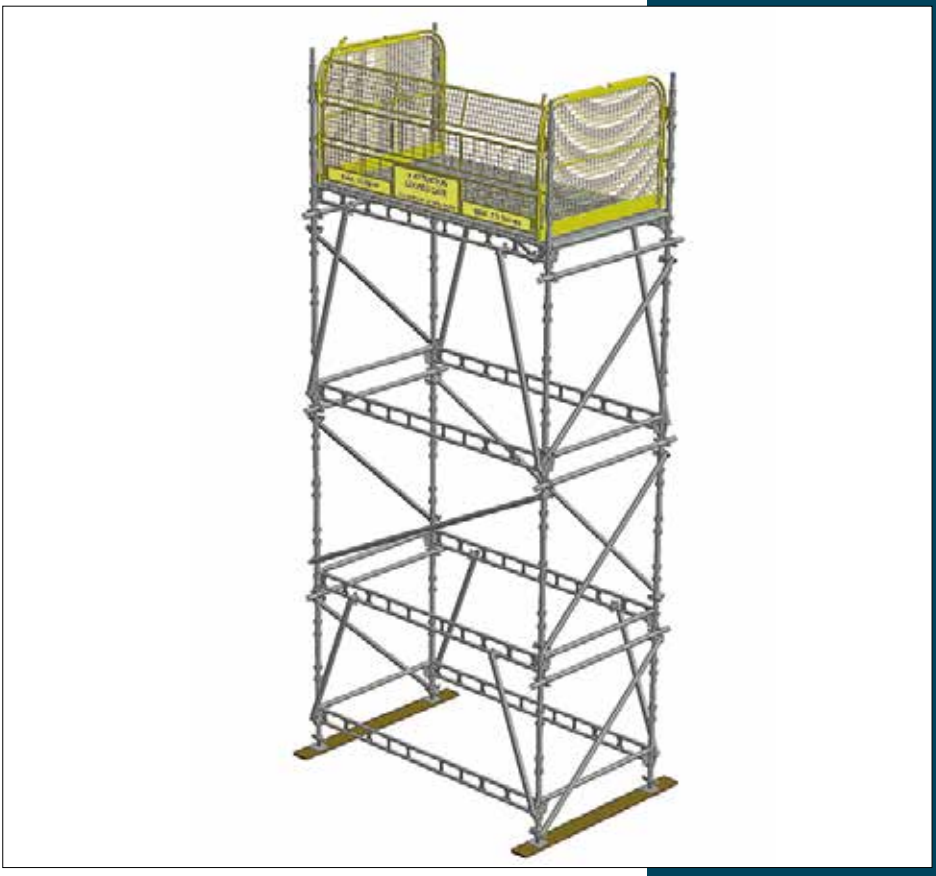
USER´S MANUAL
HAKI LOADING TOWER



Important information

HAKI's product liability and user´s manuals apply only to scaffolds that are entirely composed of components that have been made and supplied by HAKI.

HAKI's scaffold systems must not be erected using components of makes other than HAKI or be connected to scaffolds of makes other than HAKI. In such cases, a special study of load-bearing capacity must be carried out. However, HAKI has no objection to the customary addition of scaffold tubes and approved couplers to the scaffold.

Adding components from different suppliers may invalidate the insurance cover.

This user´s manual is based on a minimum of 2 competent erectors wearing safety harnesses with twin tail lanyards.

This user´s manual is to be used in conjunction with HAKI training courses.

HAKI reserves the right to make technical modifications on a continual basis.

The latest versions of HAKI user's manuals can be downloaded from our website, www.HAKI.com.

For scaffold structures that are not covered by this user´s manual, please contact HAKI's technical department.

HAKI colour code

Horizontals and diagonals are marked with their nominal sizes (bay sizes) and a colour code. The marking is a useful means of identification when erecting and handling the scaffold material.

564	1050	1964	3050
700	1250	2050	
770	1550	2500	
1010	1655	2550	

Forces and dimensions

1000 N = 1 kN ~ 100 kg

10 N ~ 1 kg

All measurements in mm

HAKI Loading Tower

The HAKI Loading Tower is designed for loads of 15kN/m² or 7.5 tonnes UDL and caters for impact loading caused by fork lift or crane. The Loading Tower has a plan dimension of 3050mm x 1655mm and lift heights of 1000, 1500 or 2000mm can be achieved.

Always ensure the ground is fully prepared to support the Loading Tower and that the correct size of sole pads is used.

General

The Loading Tower is made from pre-fabricated components. All components are hot-dip galvanized. The HAKI Loading Tower consists of HAKI Universal base jacks, standards, beams, steel decks and diagonal braces. Other components that are designed specifically for Loading Towers include knee braces, plan braces, side panels and gates.

The Loading Tower will always be built progressively and as a separate construction.

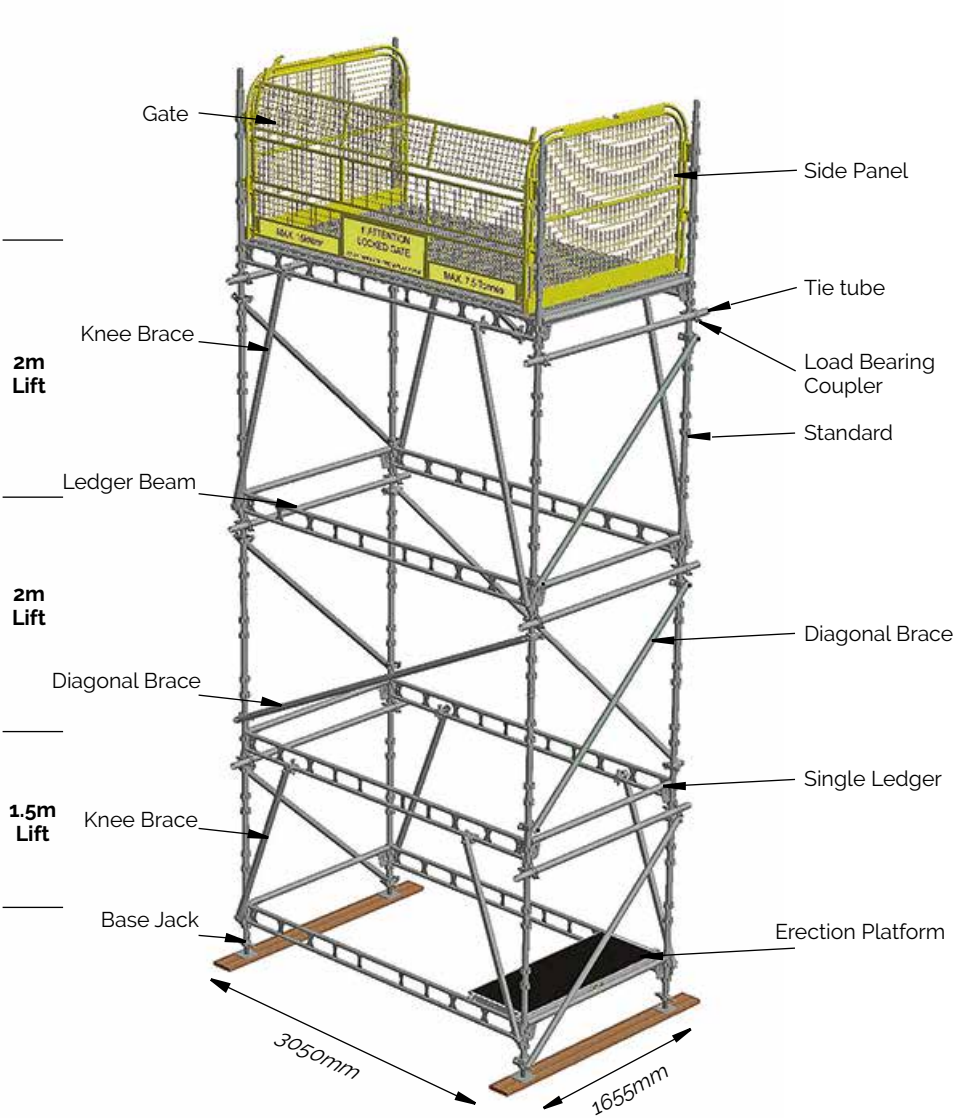
Marking

All components, with the exception of locking catches, pins etc, come permanently marked with the HAKI logo and the last two figures of the year of manufacture (S22).

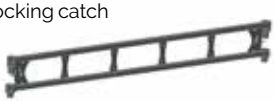
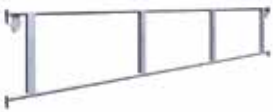
All load bearing components are marked for full traceability.

IMPORTANT!

ENGAGE LOCKING CATCHES AS EACH COMPONENT IS FIXED



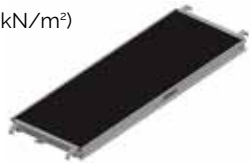
Typical 6m High Tower - Top Working Lift Only

Name	Code	Item No.	Weight(kg)
Base Jack BS Adjustable 55-570 mm 		**2071000**	5.0
Standard S Standard joint with spigot Pockets at same level Ø48 mm 	1000 1500 2000 3000	**7016100** **7016150** **7016200** **7016300**	5.3 7.7 10.1 15.2
Locking Pin Steel Ø 16 mm For reinforcing standard joint in connection with tensile load, e.g. when scaffolding is suspended, lifted or used for temporary roof. 		**5141257**	0.3
Ledger beam LBL With spring locking catch Ø 34 mm 	3050	**7021302**	12.3
Single Ledger ERB With spring locking catch Ø 48 mm 	1655	**7022161**	6.3
Guardrail Frame GFL With spring locking catch 	1655 3050	**7052164** **7052304**	7.4 10.5
HAKI Steel Deck W=230mm Load class 6 	1655x230x90	**21521655**	10.1

Name	Code	Item No.	Weight(kg)
Diagonal Brace DS With wedge couplers Ø48 mm DS 1655 L=2235 DS 3050 L=3400	 1655 3050	 **7122164** **7121304**	 10.1 14.2
Knee Brace	1000 1500 2000	**70571000** **70571500** **70572000**	6.8 8.4 11.0
Loading Tower Plan Brace		**7057201**	10.2
Loading Tower Side Panel	LH	**7057250**	22.0
Loading Tower Side Panel (With incorporating Lock)	RH	**7057251**	22.0

Name	Code	Item No.	Weight(kg)
Loading Tower Gate 		**7057300**	34.0
Gate closed for transportation 			
Ramp 	900x300	**7057249**	9.0
Spacer 300 	300	**7022030**	1.5
Standard Adaptor SC 		**7011002**	2.9
Toeboard AL 	300	**4161031**	0.65

Erection Accessories

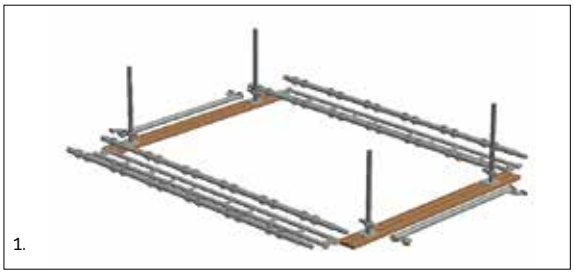
Name	Code	Item No.	Weight(kg)
Light Deck AL Load class 3(2.0 kN/m²) 	1655x600	**4071162**	13.5
Advanced Guardrail Tool 		**4052001**	1.4
Guardrail Frame GFL 	1655	**7052164**	7.4
Ledger beam LBL 	1655	**7021162**	6.7

For other accessories, see HAKI Component List

Information on safety when erecting and dismantling

1. Before erecting or dismantling a scaffold, the working area should be fenced off where possible.
2. The location for the scaffold must be checked in order to prevent risks when erecting, dismantling and moving the scaffold and to ensure that work can be carried out safely with regard to level and slope, obstacles and wind conditions.
3. Make sure that all lifting equipment to be used, e.g. chain hoists, lifting ropes, pulley blocks, etc., has been thoroughly tested and approved by an authorized person in accordance with local regulations.
4. Check that tools and protective equipment are available at the worksite.
5. Wear appropriate personal safety equipment at all times, e.g. safety harnesses, proper independent lifelines with suitable fixings, etc.
6. When erecting and dismantling a scaffold, robust temporary decking must be used as temporary platforms for the scaffolders.
7. Always make sure that the safety locking devices that prevent a platform lifting off have been activated once a platform has been installed.
8. Study all relevant instructions or safety directions from the manufacturers of the various scaffolds that are to be used.
9. Never climb up a scaffold from the outside. Always use the stairs, ladders or climbing frames that are designed to provide access to the upper decks from the inside of the scaffold.
10. If the scaffold is located outdoors, erection or dismantling work must be discontinued in severe weather conditions. All loose components and materials must be secured prior to leaving the scaffold.
11. All scaffolding work must be undertaken by competent operatives under the supervision of a competent person.
12. Raising and lowering of parts, material and tools using ropes or slings must be carried out in a protected lifting area.
13. Lifting equipment must not be fitted to scaffolding unless ties or equivalent devices are secure.
14. Beware of any overhead power lines nearby.
15. Always observe and comply with the regulations issued by the local authorities concerned.
16. Operatives should always be clipped to a single ledger or ledger beam during erection/dismantling. Reference should be made to the "Personal Safety Equipment" section in the HAKI Universal User manual.

Before erecting the Loading Tower, check and flatten out the ground. The ground must be flat for even settlement of the base lift. The ground's bearing capacity may be improved with the help of sole pads.

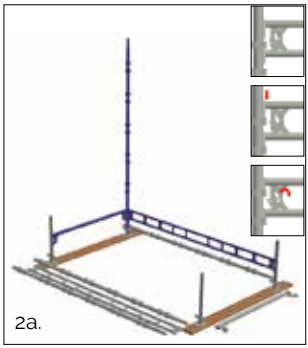


1.

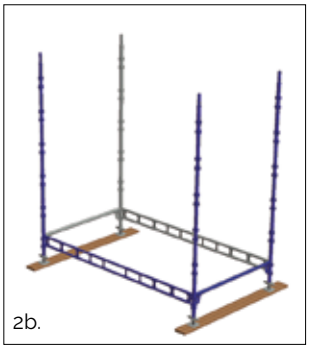
1. Lay out material to form base lift.

Position base jacks on sole pads, in approximate position of standards.

Note: When selecting the length of standard to use, always allow sufficient length to fit the side panels, i.e at least 1m above platform height.



2a.



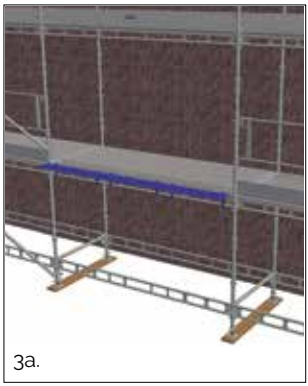
2b.

2a. Install the first standard and fit a 1655mm single ledger and a 3050mm ledger beam to it.

The beams are fitted to the lowest group of pockets on the standard.

Lock the beams into position.

2b. Install standards, transoms and beams in order to complete the first lift.



3a.

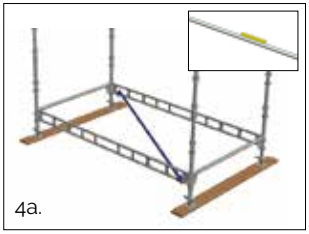
3b.

3a. At the location of the Loading Tower, the main scaffold platform should be extended out by the addition of one scaffold board.

Note: When erecting next to a HAKI scaffold an alternative is to use 300 spacers and a steel deck(3050 mm steel deck=CLASS 6).

3b. Position the Tower approximately 250mm away from the main platform. This gap will be covered by the ramp.

Note: For the correct operation, it is essential that the Loading Tower remains square at all times. Fit plan brace at all working levels.

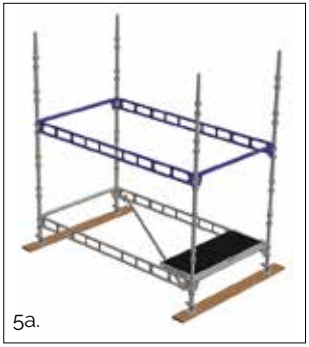

4a.

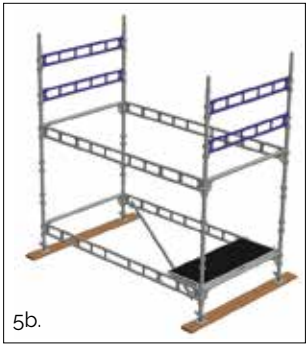

4b.

4a. Install the plan brace onto the bottom chord of the 3050mm ledger beams.

Level the bay until it is squared off and lock the plan brace wedge.

4b. Check the levels in both the transverse and longitudinal directions using a spirit level and adjust using the base jacks.


5a.

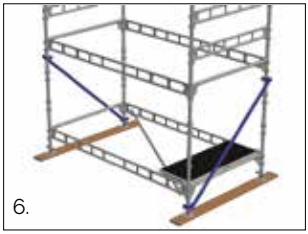

5b.

5a. Install second level of ledger beams and single ledgers either 1000, 1500, or 2000mm above the first set of beams.

5b. Install temporary 1655mm ledger beams using AGR tools.

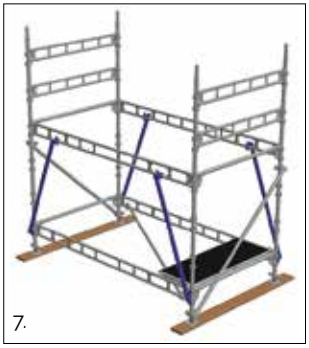
Note: This level may be higher/lower than the main platform, as the ramp will "cater" for the difference.


6.

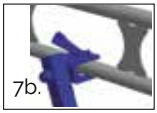

6.

6. Install the vertical 1655mm diagonal braces to both front and rear single ledgers and correct the vertical alignment of the standards.

7. Install the knee braces to both front and rear ledger beams.


7.


7a.


7b.

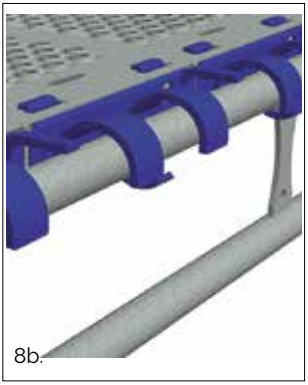

7c.

7a. Locate tongues into pocket first then,

7b. Locate 'U' profile onto bottom chord of the ledger beam.

7c. Lock into place with wedge.

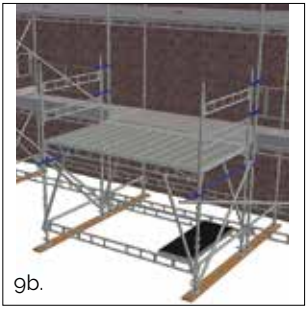

8a.


8b.

8a. Install 1655mm steel decks over the ledger beams.

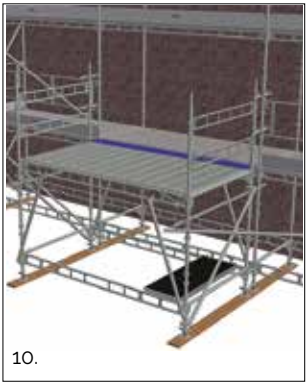
8b. Prevent uplift by closing locking catch.

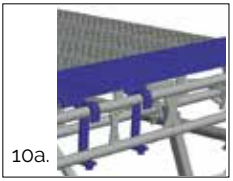

9a.


9b.

9a. Reposition plan brace to new level.

9b. Install any T&F required to tie the Tower to the main scaffold or 'make up' guardrails.


10.


10a.


10b.

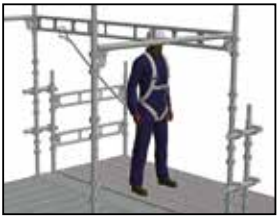
10a. Install ramp onto ledger beam and tighten securing nut.

10b. Lower the ramp onto the scaffold board.

Note: Ramp is not used if the Loading Tower is connected to a HAKI scaffold.

Note:
You will now need to access the Tower Platform.

11. As there will be no fall prevention in place, the erectors should 'Hook on' their harnesses to the main scaffold.



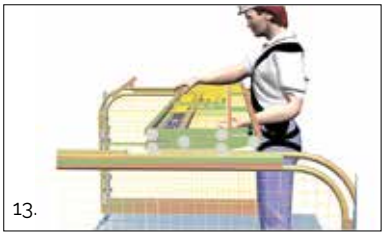

12.

12. From the Loading Tower Platform install the right hand (RH) side panel (with incorporating lock) and the left hand (LH) side panel.

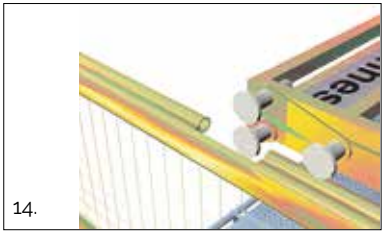
IMPORTANT
ENGAGE ALL LOCKING CATCHES

Installation of gate

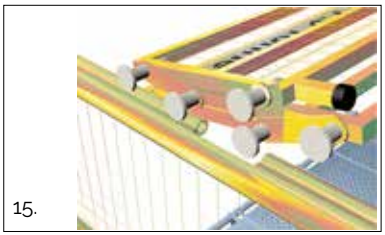
Raise the gate to the Tower Platform in the folded position (eg front face of toe board facing downwards, handle facing upwards).


13.

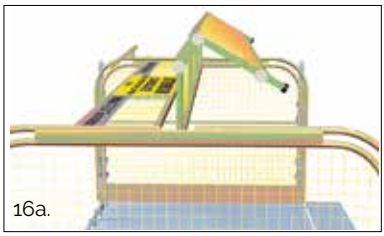
13. Support on side panel.


14.

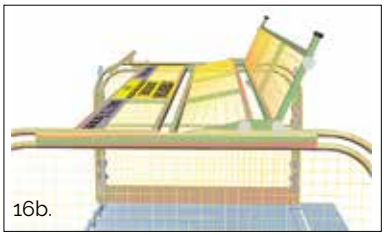
14. Feed first roller into side panel via entry.

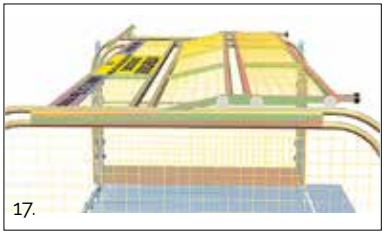

15.

15. Slide forward until the 2nd and 3rd rollers are located into track.


16a.

16a, b. Lift remainder of gate and extend towards you.


16b.


17.

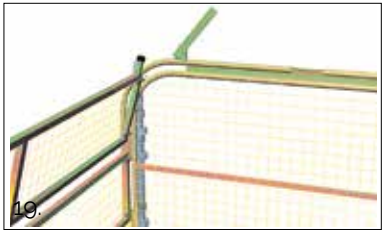
17. Slide gate forward until all remaining rollers are located into the side panel.


18.

18. Lower gate into the closed position.

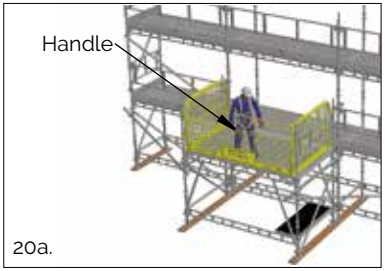
Note: The gate can only be opened from the loading platform.

To open the gate


19.

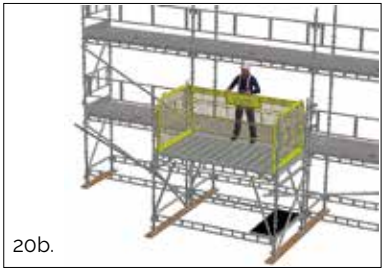
19. The gate can only be opened from the loading platform.

Raise locking catch.

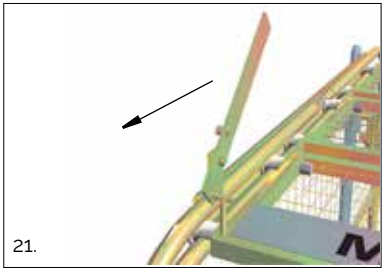


20a.

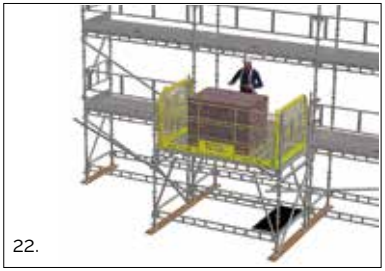
20a. Using handle pull the gate until the tower is completely closed from the main scaffold.


20b.

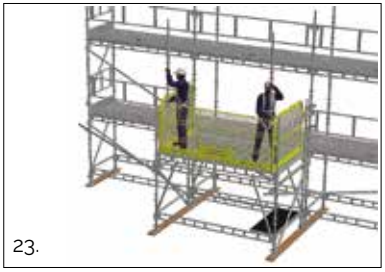
20b. Operatives on the main scaffold are then secured behind the gate.


21.

21. The action of opening the gate automatically resets the locking catch into the closed position.

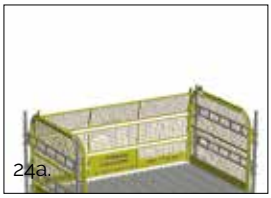

22.

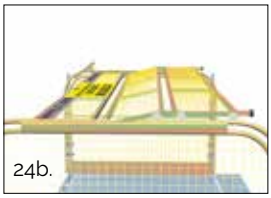
22. Once loading is complete the gate is closed and is automatically re-locked.


23.

23. When the next lift is required, from the safety of the guardrailed tower, install any additional standards and ledgers.

Whilst clipped on to the scaffold remove gate and side panels.

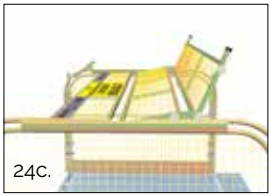

24a.

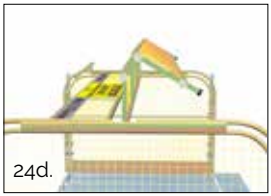

24b.

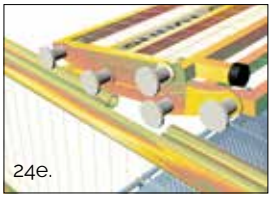
24. Remove gate (reverse of 13- 18) and side panels.

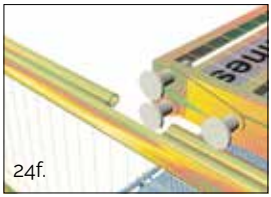
Store the removed components on main scaffold.

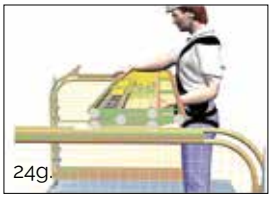
Scaffolding material must NOT be thrown down from the scaffold.


24c.


24d.


24e.


24f.


24g.


25.

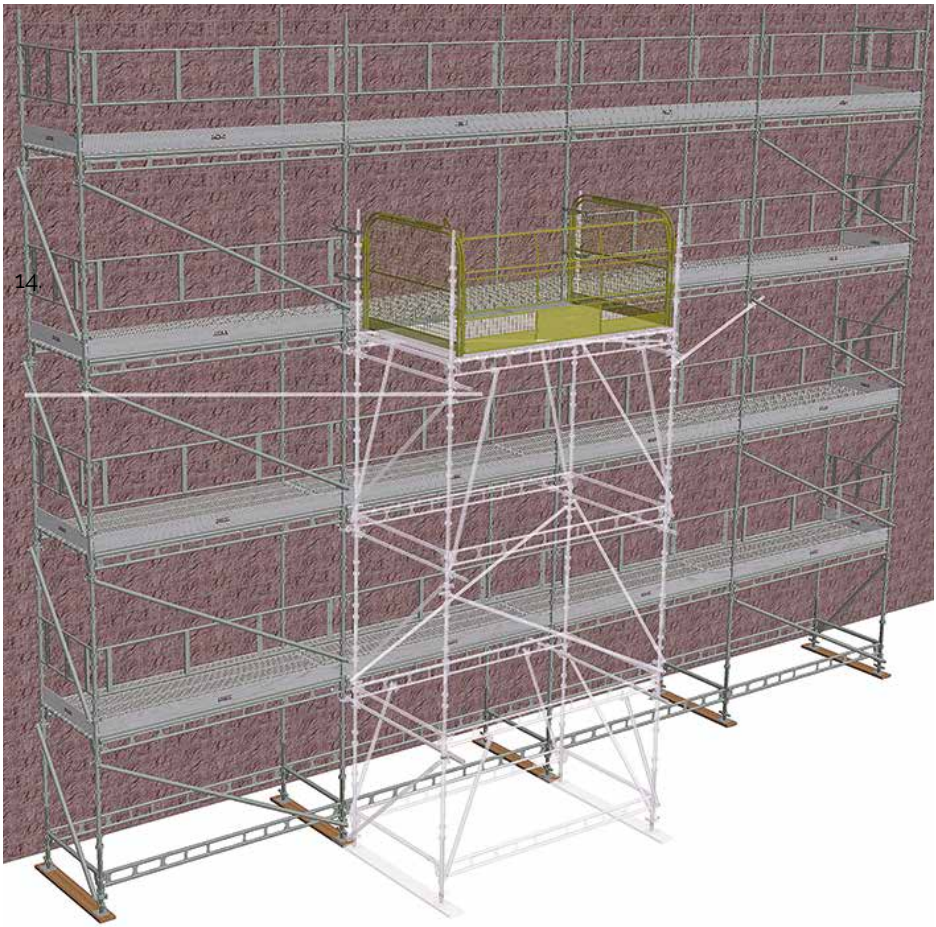
25. Repeat steps 5b to 18.

Continue erection up to the desired height.

Use approved lifting equipment for transporting materials.

Information on safety when dismantling

1. Do not throw or drop materials to the ground. This may damage the material or cause personal injury. The materials must be lowered down to the ground by means of ropes or slings or passed down by hand.
2. If intermediate ties or tie rod tubes have been installed, they must not be removed until the dismantling process reaches the level in question.
3. Always observe and comply with the regulations published by the local authorities concerned.
4. Operatives should always be clipped to a single ledger or ledger beam during dismantling.
5. Reference should also be made to section "Information on safety when erecting and dismantling" on page 9 in this manual.

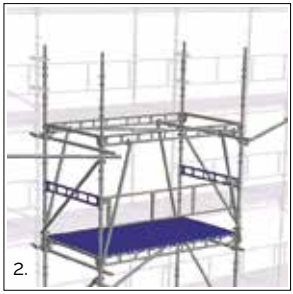


Typical 6m High Tower - Top working lift Only

Progressive dismantling of the Loading Tower.

1. Dismantlers should always be clipped to a single ledger or ledger beam.

Remove gate (reverse of 13-18), side panels and ramps.



2. Lower the decks one lift underneath to work as a safe working platform. Install temporary ledgers.

3. Remove ties, wing braces, diagonal braces, knee braces, and plan brace.

4. Remove lift.

Repeat same dismantling procedure until dismantling is complete.

For other dismantling procedures, please contact HAKI's technical department.

Base jacks

The loading tower is erected on base jacks of type BS, which are adjustable between 55-570mm.

If greater adjustment is needed, lower the base jacks and connect the beams to the next group of pockets.

This means that it is always possible to adjust the standards so as to make the beams level.

Standards

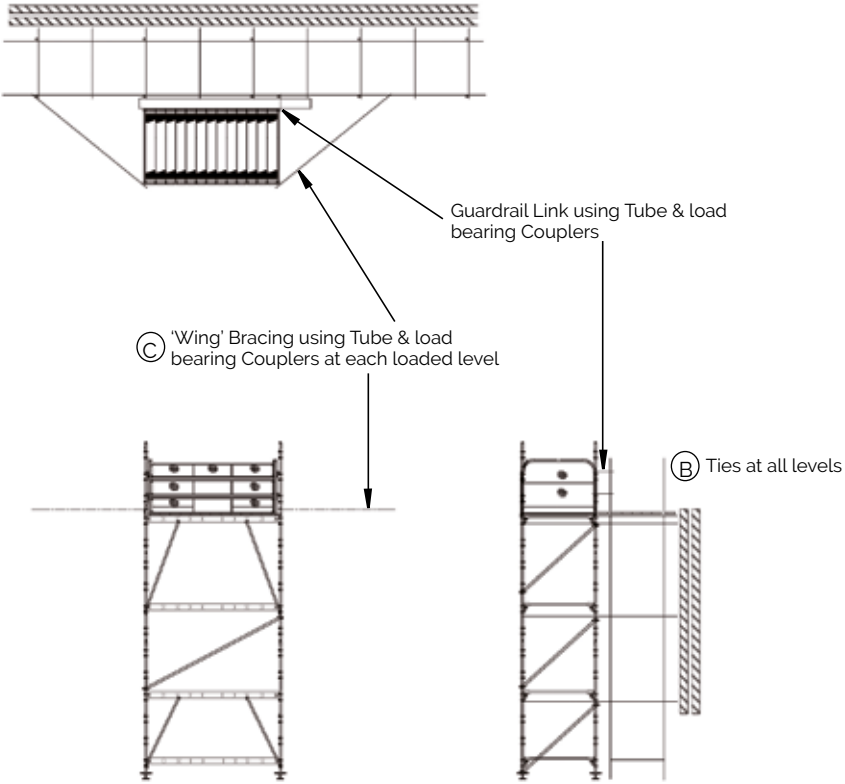
Standards of length 3000 and 2000mm are normally used in the loading tower.

Bracing and Tying in

Ⓐ It is important to ensure that the Loading Tower is square. When starting, use plan brace at base lift. To ensure tower is square, re-use plan brace at the loaded level.

Ⓑ Loading Tower should be tied at all levels using tube & load bearing couplers from both the inside and outside standard.

Ⓒ At each loaded level, 'wing' bracing should be fitted using tube & load bearing couplers.



Bracing and tying in

Depending on lift heights, the first level of knee braces may remain erected and additional knee braces introduced to suit the lift height under construction.

Should the knee brace be removed, it **must** be replaced with a diagonal brace.

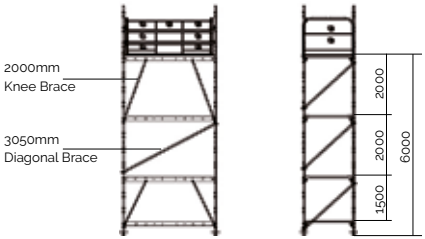
On any lift which has an operational gate, the ledgers beneath **must** be knee and plan braced.

Loading Tower **must** be fully braced at all times.

2m LIFTS

STAGE 1

STAGE 2



STAGE 3

1.5m LIFTS

STAGE 1

STAGE 2

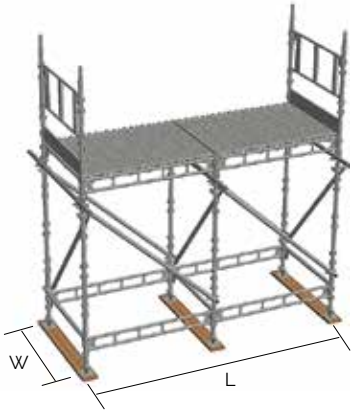
STAGE 3

Maximum Tower Loading		
With Knee Braces	15kN/m²	75kN UDL
Without Knee Braces	5kN/m²	25kN UDL

Maximum Tower Heights		
Loading (kN/m²)	**2m Lifts (m)**	**1.5m Lifts (m)**
1@15	82	68
1@10	100	96
2@10	42	34
2@5	100	92
3@5	74	60
4@5	34	28
1@10 +1@5	78	64
1@10 +2@5	38	32

For conditions outside of the above, please contact the HAKI Technical Department.

6 Leg Loading Tower Arrangements

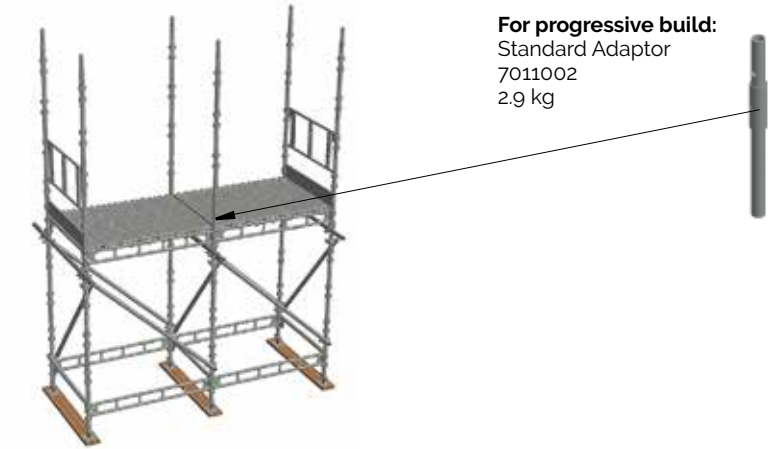


Gates and Plan Braces to be provided by the client.

On any lift which has an operational gate, the ledgers beneath **must** be plan braced.

Loading Tower **must** be fully braced at all times.

6 Leg Tower - Maximum Tower Loading		
Length (m)	Width (m)	Loading
2x1.964	2.5 1.964 1.655	8 kN/m² 11 kN/m² 13 kN/m²
2x1.655	2.5 1.964 1.655	11 kN/m² 15 kN/m² 17 kN/m²



For progressive build:
Standard Adaptor
7011002
2.9 kg

For constructions not covered in this User´s Guide, please contact the HAKI Technical Department.

Methods of erection when guardrail frame is fitted in advance

In order to be able to fit guardrail frames prior to decking, use HAKI's advance guardrail(AGR) tool (or the aid of other guardrail fitting devices).

The standards must be one metre higher than the next lift.

For other fitting devices, see HAKI Component List.

Experience

With over 60 years experience to call on, HAKI has gained a leading reputation in its field. With its own R & D and manufacturing facilities, the company now operates throughout Europe and its equipment is in use worldwide. With all products designed and manufactured to ISO 9001:2008, and a comprehensive training and support infrastructure, you can rely on HAKI for support.

Training

The Company´s dedicated Training Centre is equipped with the full range of HAKI products where a comprehensive choice of courses is offered. With the benefit of this training, all users of HAKI products can be assured that the equipment is being employed safely and effectively.

Support

From computerised estimating facilities to on site assessment and project back up, HAKI is with its customers every step of the way. Working with HAKI means far more than just proven equipment, it means working with People who understand the scaffolding industry. Whatever the project, the company is committed to ensuring every user enjoys the full benefits associated with the use of HAKI - maximising the savings, profitably, and above all, SAFETY.

Health and Safety at Work Act, 1974

HAKI equipment is designed to meet the requirements of the above Act, Section 6.

It is also the customer´s responsibility to comply with the requirements of this Act, particularly to use the equipment in accordance with current codes of practice and in ensuring that components are in good working condition prior to each use.

We are able to provide assistance and advice on matters relating to safe and proper use of HAKI equipment.

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