

2017 AT-PAC RINGLOCK

# SAFETY MANUAL & USER GUIDES

UNITED KINGDOM

# RINGLOCK SAFETY MANUAL & USER GUIDES

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# RINGLOCK SAFETY MANUAL & USER GUIDES

## Introduction

### INTRODUCTION TO AT-PAC



Since 1995, AT-PAC has offered Complete Scaffolding Solutions to our strategic clients throughout the world, matching our expertise to the specific needs of our Customers. With our extensive experience in the industrial market, we specialise in Oil, Gas & Chemicals, Power & Energy and Mining & Refining projects. AT-PAC hires and sells the highest quality products by ensuring that our production processes adhere to our rigorous quality assurance program and quality control.

AT-PAC has locations throughout the UK, USA, Canada, Australia and South America. We currently supply Asia-Pacific, Africa, the Middle East and beyond. Our unparalleled expertise and professionalism enables us to consistently deliver Complete Scaffolding Solutions. Our experienced customer driven team provides a seamless service from product development, supply chain management, production, quality control, delivery with local engineering support available for fast effective solutions where required.

AT-PAC Ringlock is a modular system scaffold which enables users to quickly and efficiently erect, use and dismantle temporary work structures. The AT-PAC Ringlock system conforms to European standards BS EN12810 and BS EN12811. AT-PAC Ringlock is compliant with The National Access & Scaffolding Confederation (NASC) Code of Practice for System Scaffold.

**AT-PAC LTD. is a Non-Contracting Full Member of the  
National Access & Scaffolding Confederation**



For information on Ringlock system components not contained in this document please refer to the Ringlock Brochure.



# RINGLOCK SAFETY MANUAL & USER GUIDES

## Ringlock Quality Factors & Designation

### RINGLOCK QUALITY FACTORS

All of AT-PAC Euro range of Ringlock products are engineered to meet the highest quality standards based on three simple factors:

- MATERIAL** We only use the highest quality steel in our products. Our steel is certified and tested, it conforms to or exceeds industry standards no matter the location or climate.
- FIT** AT-PAC products are engineered with versatility and usability in mind. Our modified product designs increase efficiencies and productivity, saving your projects time and money.
- FINISH** Where applicable, our products are finished and protected by hot-dipped zinc galvanizing. This method of finishing maximizes the utilization and extends the product life.

For additional information on Ringlock system components please consult your local AT-PAC representative.

### DESIGNATION OF RINGLOCK

The Designation of Ringlock is in accordance with BS EN 12810-1:2003 and reference should be made to the Ringlock Technical Manual for further information.

# RINGLOCK SAFETY MANUAL & USER GUIDES

## Safety Guidelines and Safe Use

### SAFETY GUIDELINES AND SAFE USE

The guidance given here is not intended to replace any relevant UK/European standards, Company Procedures, Work at Height Regulations and other legislation, but is a practical guide to good scaffolding practice using AT-PAC Ringlock System scaffolding. Please refer to the latest versions of BS EN12810, BS EN12811, the NASC Guidance Notes and current legislation prior to starting your work.

1. Ensure that you follow your Company's safe systems of work at all times.
2. Ensure that your staff erecting, dismantling or modifying any Ringlock scaffold are licensed to carry out the task.
3. Ensure that all persons erecting, dismantling or modifying the scaffold structure are working to the latest version of the applicable UK / European standards and current legislation.
4. Ensure all Personal Protective Equipment (PPE) is suitable and sufficient and worn as appropriate.
5. Consideration should also be given as to where additional hazards may be present whilst scaffolding operations are taking place, such as overhead power cables, roadways, schools and if public protection is required, if the scaffold is to be sheeted, who is responsible for the design.
6. Ringlock scaffold structures are recommended to be inspected and recorded:
  - Prior to being put into use for the first time
  - After any alteration or adverse weather
  - After any event likely to affect its stability
  - Regular intervals as per site requirements or Company procedures but generally not exceeding 7 days
7. Access and egress should be considered as early as practicable, for both the scaffold operatives and the end user in mind. Ladders should be used by the scaffolders when erecting, modifying or dismantling any Ringlock scaffold. Ledgers and brace components etc. must not be used as a means of support. Ensure that access and egress routes including ladders and stairways, are kept clear.  
Below is the hierarchy of measures to consider when selecting methods to prevent a person falling at access and egress points:
  - Install staircases
  - Install ladder Access Bays with Single Lift Ladder
  - Install ladder Access Bays with Multiple Lift Ladders
  - Install internal ladder access with protection i.e. ladder trap/handrails etc.
  - Install external ladder access using the Ringlock adjustable Swing Gate



# RINGLOCK SAFETY MANUAL & USER GUIDES

## Safety Guidelines and Safe Use—(Cont'd.)

8. Employers have an obligation to ensure that Work at Height is:
  - Properly planned
  - Appropriately supervised
  - Done in a safe manner “so far as is reasonably practicable”
  - Include planning for emergencies & rescue
  - Weather conditions do not jeopardise health and safety
9. Before allowing people or materials on the Ringlock scaffold, ensure that it has been erected correctly and complies with the specified requirements and all applicable legislation.
10. Ensure that all people using the Ringlock scaffold are aware of the purpose for which it is intended to be used and the maximum loading to which it can be subjected.
11. Ensure users understand that any unauthorised modification to the Ringlock scaffold or removal of components could cause a safety hazard. Alteration or extensions should be carried out only by a licensed person.
12. Provide barriers and warning notices to prevent access to incomplete sections of scaffolding.
13. Do not overload and ensure that crane and forklift drivers understand loading restrictions on each part of the scaffold structure.
14. Because of the increased use of mechanical lifting plant on site there is an increased possibility for scaffolding components to become fouled/caught. When using cranes or other mechanical lifting devices near any Ringlock scaffold care should be taken to ensure that nothing catches under any part of the scaffold. Otherwise uplift could occur with potentially dangerous consequences.
15. Pigtail Pins/ Toggle Pins or Standard Leg Locks available to positively fix standards together if your Method Statement/Risk Assessment indicates that uplift cannot be eliminated.
16. Scaffold access should be secured when not in use to prevent unauthorised access onto scaffolding. Ladders should be kept in a storage compound or container.
17. Consider enclosing the base of the scaffolding to prevent climbing, especially near occupied premises.
18. Consider the environment particularly with respect to pedestrian and vehicle movements.

*If you are in any doubt regarding any information contained within this Safety Manual and User Guide, please contact your local AT-PAC representative.*

# RINGLOCK SAFETY MANUAL & USER GUIDES

## Safety Guidelines and Safe Use—*Never*

### SAFETY GUIDELINES AND SAFE USE—NEVER

- Never** Throw Ringlock scaffold equipment or any other materials up or down.
- Never** Undertake work at height when there is a potential to fall without wearing your safety harness correctly and clipping the lanyard to a secure anchor point.
- Never** Do any overhead or street work without displaying warning signs, or segregating others from the live working zone (barriers).
- Never** Use any defective / modified equipment.
- Never** Overload the scaffold you are erecting, altering or dismantling with spare materials.
- Never** Rest scaffold equipment against an object if there is a potential for it to fall
- Never** Leave partly erected or dismantled scaffolds in an unsafe condition, (always ensure adequate signage is displayed to warn others).
- Never** Accept an instruction from a customer or anyone else that does not comply with safety regulations or current legislation.
- Never** Leave an exposed edge where people or building materials could fall.
- Never** Remove ties except when using trained operatives, working to your agreed site requirements and instructions.
- Never** Remove guardrails, toeboards, or brick guards except when using trained operatives, working to your agreed site requirements and instructions.
- Never** Remove components or adapt the Ringlock scaffolding with non-genuine equipment.
- Never** Create gaps in platform by removing Ringlock Steel Planks from platform thus leaving an exposed edge.
- Never** Work on or use a Ringlock scaffold which is being erected or dismantled.
- Never** Remove ladders or staircases.
- Never** Overload the scaffold.
- Never** Undermine the scaffold by digging trenches or foundations under or adjacent to it.
- Never** Add sheeting or netting to scaffold without the approval of the scaffold designer.
- Never** Forklift loads directly onto access scaffold (instead, use a loading tower).

**NEVER TAKE RISKS—THE ODDS ARE AGAINST YOU**



# RINGLOCK SAFETY MANUAL & USER GUIDES

## Safety Guidelines and Safe Use—*Always*

### SAFETY GUIDELINES AND SAFE USE—ALWAYS

- Always** Ensure all on-site users know for what purpose the Ringlock scaffold is intended and the load it is designed to support.
- Always** Prepare the ground for the scaffold and the load it will impose.
- Always** Ensure that you provide agreed storage areas for your Ringlock scaffolding on site to reduce handling and prevent tripping hazards.
- Always** Keep access routes clear.
- Always** Inspect your scaffold each time before use.
- Always** Inspect your scaffolds and issue reports.
- Always** Give consideration to the use of a tagging system i.e. Scafftag.
- Always** Prevent access to incomplete and/or unsafe scaffolds and ensure that you have “scaffold not to be used” signs in place.
- Always** Inform the Scaffolding Manager if the scaffold gets damaged, repairs can then be arranged.
- Always** Protect scaffold from damage by site plant.
- Always** Ensure loads on the platform are evenly distributed.
- Always** Consider the weight of the materials you are loading on the scaffold and instruct operatives on maximum loading.
- Always** Instruct forklift driver on maximum loading.
- Always** Instruct the operatives who will be using the scaffold not to make any adaptations.
- Always** Report scaffold defects to scaffolding contractor—you may be saving a life.

**ALWAYS LOOK AFTER YOUR RINGLOCK SCAFFOLDING. BE SAFE**

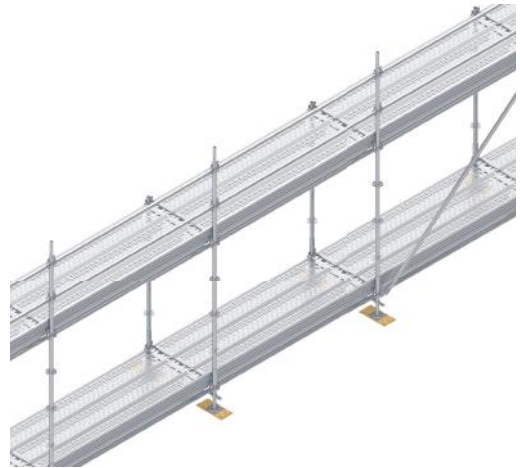
# RINGLOCK SAFETY MANUAL & USER GUIDES

## Erection Guidelines for Ringlock Scaffold

### ERECTION GUIDELINES FOR RINGLOCK SCAFFOLD RECOMMENDATIONS

*PRIOR TO ERECTING RINGLOCK THE FOLLOWING IS RECOMMENDED:*

1. The job site should be inspected to ensure that the ground or other supporting structure is strong enough to safely support the self-weight of the scaffold and the imposed loads on the platforms. In addition, please make yourself aware of the proximity of power lines, overhead obstructions and weather conditions. These could pose a possible danger during the erection, use and dismantling of Ringlock and should be evaluated and adequately addressed in accordance with the requirements for provision of Risk Assessments and Method Statements.
2. Check the condition of the building façade at the proposed tie locations.
3. The spacing of the Standards should be in accordance with the relevant layouts, if available.
4. If design drawings of the scaffold are required, check the requirements of the local authority with respect to what must be shown on the drawings (load rating, erection/dismantling instructions etc.)
5. All equipment should be inspected prior to use to ensure that it is in good condition and is serviceable. Damaged or deteriorated equipment must not be used.
6. Avoid storing or handling scaffold components below or close to electrical power lines. Check the requirements of the authority having jurisdiction for the exclusions zones.
7. Care must be taken when scaffolding work is in close proximity to exposed and insulated electrical lines and hidden electrical cables (for example, cable concealed behind a surface where a scaffold anchor is to be fitted).
8. Be aware of all Client and work related site safety procedures as well as reference to local/ regional and legislation.
9. Be aware of possible dangers regarding explosions or fire.
10. Ensure that the scaffolders are trained and fully instructed to erect Ringlock system scaffolding.
11. Check the safety and function of all the tools that are used during erection.



# **RINGLOCK** **SAFETY MANUAL & USER GUIDES**

## **Erection Guidelines—Risk Assessment**

### **RISK ASSESSMENT**

#### ***PRIOR TO STARTING ERECTION CONDUCT A RISK ASSESSMENT***

A risk assessment is simply a means of determining what could cause harm within your workplace and developing suitable control measures to prevent accidents. It is also a legal requirement and you have duties under HSE legislation.

#### ***BEFORE STARTING ERECTION OF RINGLOCK SCAFFOLDING, WE WOULD RECOMMEND YOU CONSIDER THE FOLLOWING:***

- Ensure that all scaffolders have seen the risk assessment and ensure that they understand it.
- Ensure that all scaffolding workers sign the risk assessment form.
- Double check the worksite, ensure that all scaffolding workers have checked their tools.
- Secure the work area, isolate from others and establish drop zones.
- Consider the job at hand and ensure that nothing has been missed.
- Never be taken in by the “Big Risk” and miss other potential problems (such as trip hazards, people working nearby, possibility of dropping objects etc.)

#### ***ONCE YOU START THE ERECTION WORK:***

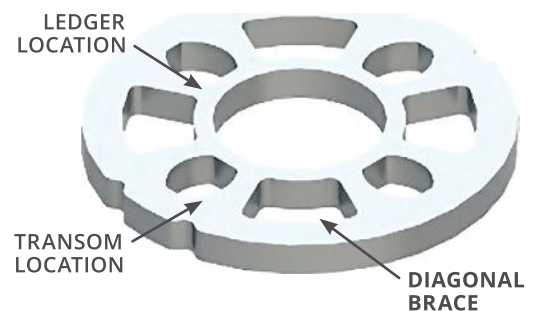
- Never work outside the scope of the Risk Assessment.
- Always stop work and re-assess if conditions change or if additional hazards, which are not included in the Risk Assessment, become apparent.
- Always stop work if you feel unsafe.

# RINGLOCK SAFETY MANUAL & USER GUIDES

## Erection Guidelines—Step 1

### SCAFFOLDING ERECTION GUIDELINES STEP 1

1. Prepare the foundation for the scaffold.
2. Install Base Collars on the Adjustable Screw Jacks, and set them out roughly in position with their corresponding Ledgers. Pick the highest ground level for the starting point to simplify later adjustment. It helps if the Base Jack adjusting handle is near the bottom of the thread. This will allow maximum adjustment on the lower ground levels.
3. The Base Jack must be located centrally on sole plates.
4. For level surfaces, start at one end where the scaffold is required, and build towards the other end. Set the Base Jack as low as possible. On level surfaces, they should all be at approximately the same height.
5. Each rosette has eight openings. The smaller openings are generally used to help guide the scaffolding to make 90 degree connections, whereas the larger opening enable connections at variable angles to be achieved.
6. Unless erecting a scaffold around a circular building structure, align the Base Collar rosettes so that one of the small openings in the rosette points in the Ledger direction. The small openings at right angles to the first will automatically align the Transoms at 90 degrees.
7. The larger openings are generally used for connecting the diagonal braces.



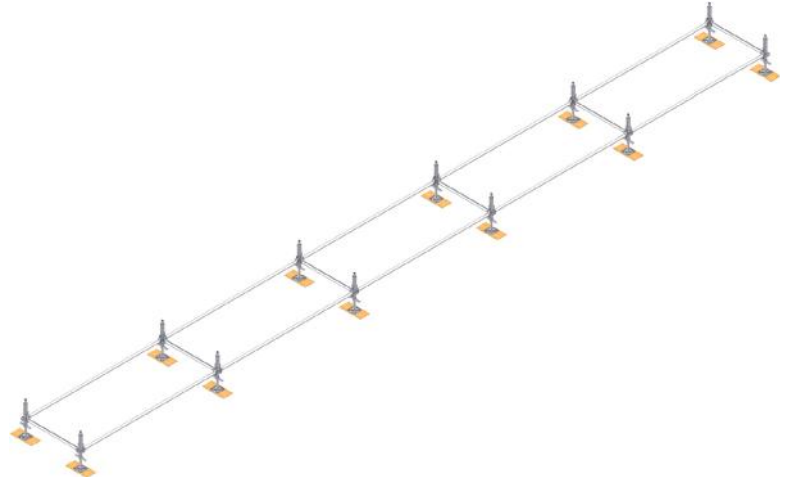
RINGLOCK ROSETTE

# RINGLOCK SAFETY MANUAL & USER GUIDES

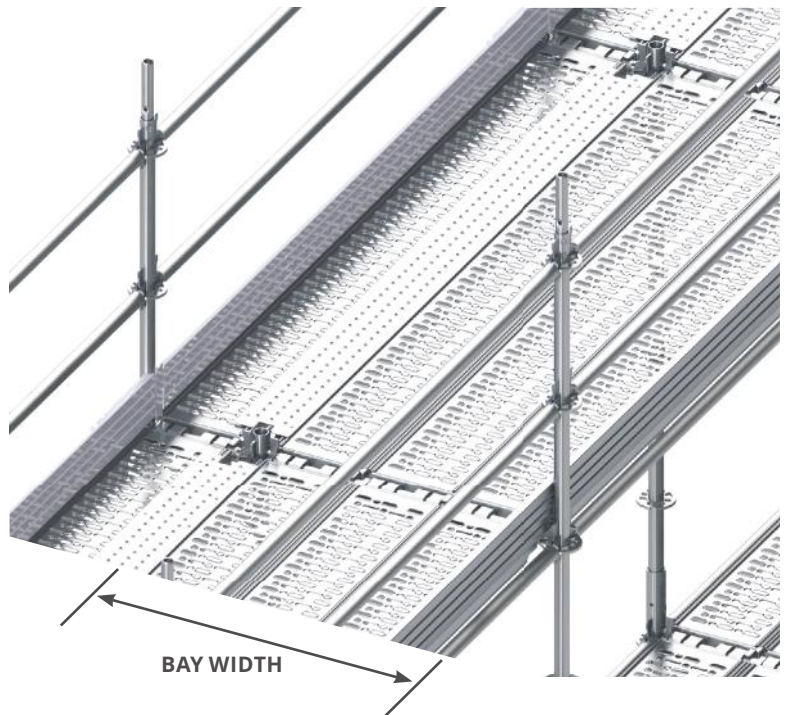
## Erection Guidelines—Step 2

### SCAFFOLDING ERECTION GUIDELINES STEP 2

1. Connect the Ledgers to the rosette on the Base Collar. Do not hammer in the wedges at this stage.
2. Using a spirit level, adjust the Jacks so that the Ledgers and Transoms are horizontal. Accuracy in leveling at this stage eliminates the need for further leveling and plumbing as the scaffold is erected.



PLANK CONFIGURATION		
BAY WIDTH (m)	NUMBER OF 0.32m PLANKS	NUMBER OF 0.19m PLANKS
0.39	1	-
0.73	2	-
1.09	3	-
1.40	4	-
1.57	4	1
2.07	6	-
2.57	7	1
3.07	9	-



DETAIL OF PLANK CONNECTION

# RINGLOCK SAFETY MANUAL & USER GUIDES

## Erection Guidelines—Step 3

3. Place Planks of the correct bay length into the end bay to fully deck out the bay. Adjust the position of the Jacks and Base Collar by pushing one Jack sideways either in or out in order that the Planks are parallel with the Ledgers. Only a small amount of movement may be needed to ensure the bay is square enough to lock down the Planks with Deck Locks. Once you are satisfied that the bay is square, fill all other bays with Planks so that a platform is created from which the rest of the scaffold can be erected.



4. When you are satisfied that the scaffold is fully squared and levelled, hammer in the wedges.

### **SCAFFOLDING NOTE:**

Irrespective of whether a platform is required on the lowest rosettes it is recommended that the Planks are installed at this level. This ensures that the scaffold is square and level prior to erection and it also provides plan stiffness. This is most important, especially when the maximum height of the scaffold is above eight lifts.

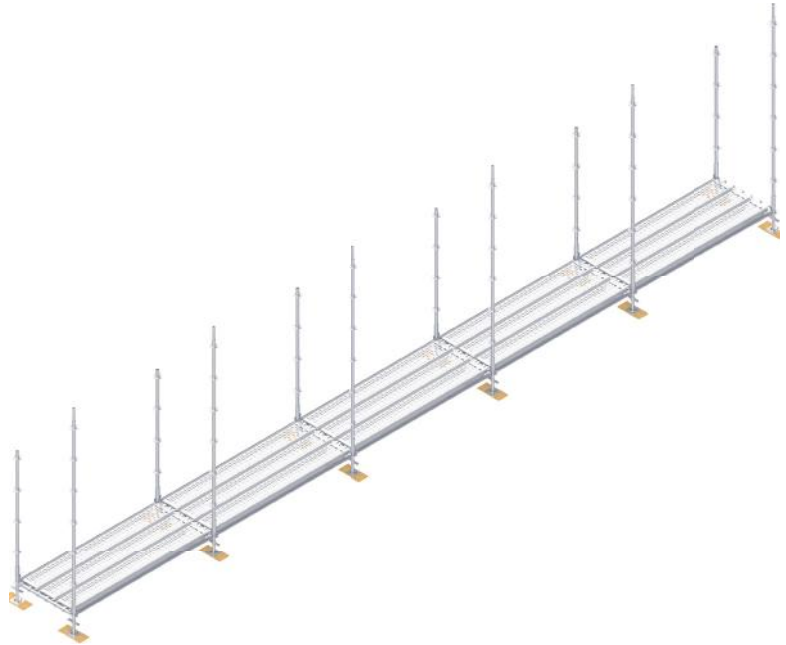
The installation of these Planks ensure that the out of alignment eccentricities are kept to a minimum in order for the scaffold to attain the maximum permissible height for each recommended tie pattern (refer to Technical Manual).



# RINGLOCK SAFETY MANUAL & USER GUIDES

## SCAFFOLDING ERECTION GUIDELINES STEP 3

1. When the base lift is completed, the first Ringlock Standards can be positioned into the Base Collars. The bottom of the Standards fit into the socket tube at the top of the Base Collar.
2. The Spigot on the Standards always point upwards.
3. It is recommended that the joints in inner and outer Standards of the scaffold be at different levels. Start with a longer vertical on the outside. This will stagger the joints in the verticals which will also aid in its stability if the scaffold is above eight metres high. It will also provide the connections for the first level of Guardrails on the outside of the scaffold.



### SCAFFOLDING NOTE:

It is not imperative that the joints in Ringlock Standards are staggered when the full height of the scaffold is less than eight metres high i.e. four lifts. In this case the inner and outer Standard can be the same length although this will not necessarily provide the appropriate stagger in the Standards to provide the connections for the guardrails when the scaffold reaches full height.

However to ensure that the scaffold attains its maximum permissible height at all times it is recommended that the Standard are staggered when at all possible. Any scaffold above four lifts should have the joints in all the Standards staggered such that the scaffold is more stable for it to achieve the maximum permissible height (refer to Technical Manual).

# RINGLOCK SAFETY MANUAL & USER GUIDES

## Erection Guidelines—Step 4

### SCAFFOLDING ERECTION GUIDELINES STEP 4

1. Ledgers and Transoms can now be placed at the required levels for the first lift.
2. It is recommended to use Truss Ledgers (Transoms) to support heavy duty working platforms as necessary.

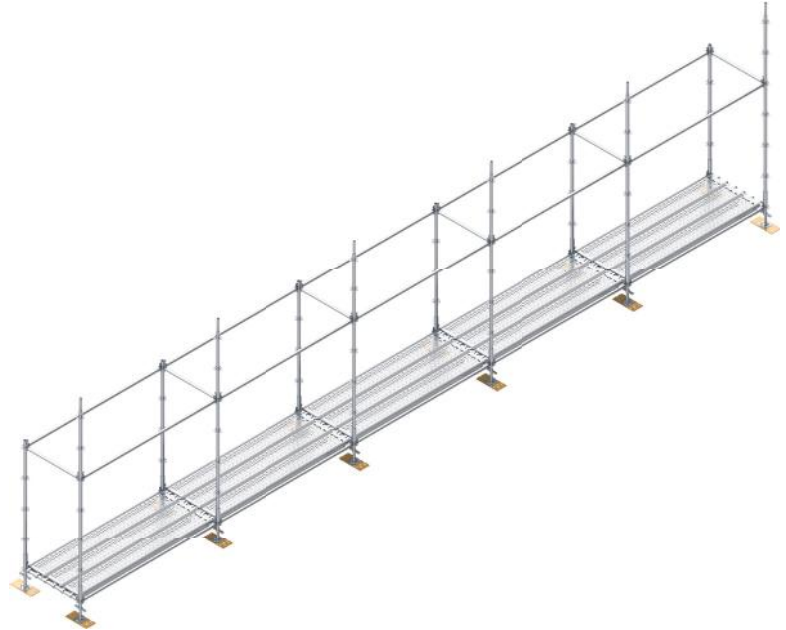
#### SCAFFOLDING NOTE:

There are several types of Ledger available to support Planks:

A 0.73m Ledger is unreinforced and will support two Planks and provide the minimum width of scaffold in accordance with BS EN 12811-1: 2003 and will generally support up to Load Class 4, although Load Classes 5 and 6 can also be supported.

O-Type Reinforced Ledgers span 1.09m (for platforms three Planks wide) and 1.4m (for platforms four Planks wide) generally support up to Load Class 4.

Truss Ledgers span from 1.4m up to 3.07m and carry varying loads depending on use and width of platform. The maximum capability of each type of Ledger is detailed in the Technical Manual.

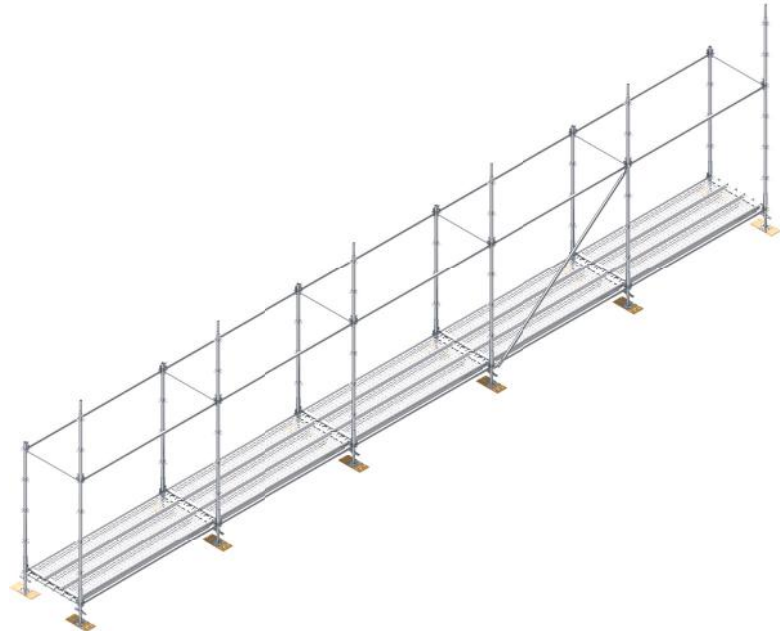


# RINGLOCK SAFETY MANUAL & USER GUIDES

## Erection Guidelines—Step 5

### SCAFFOLDING ERECTION GUIDELINES STEP 5

1. To attach the Brace, slide the wedge casting into the rosette on the Base Collar and insert the Brace wedge. Offer the wedge casting at the other end of the Brace to the rosette of the Standard at the next lift above. Always work from a fixed node to a movable upper node.
2. Diagonal/face bracing should be fixed to at least every 5th bay along the length of the scaffold and from bottom to the top of the scaffold, or as required by design.
3. Diagonal bracing helps to stiffen the scaffold and ensure it is square, keeping the Standards vertically aligned.



#### SCAFFOLDING NOTE:

Braces are generally fitted in one bay, from the bottom to the top without any break in between. This bracing pattern is then repeated every fifth bay.

Alternatively the braces can commence in the lowest outside bay and can continue as a straight line until the far outside edge of the scaffold is reached. The bracing then repeats in this manner from the next lift above until the top of the scaffold is reached.

For very long scaffolds it is preferable to start opposing bracing at both ends and work towards the middle of the façade.

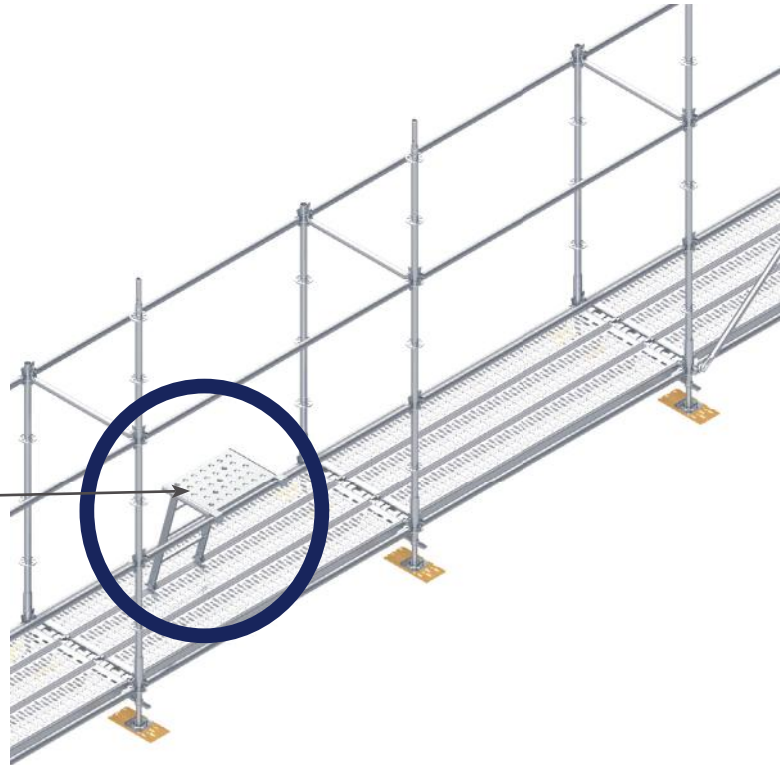
# RINGLOCK SAFETY MANUAL & USER GUIDES

## Erection Guidelines—Step 6

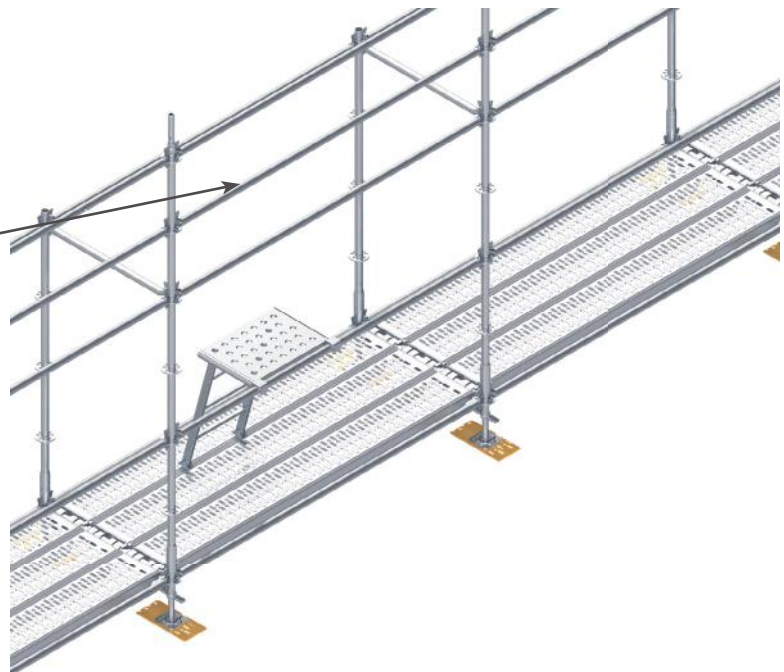
### SCAFFOLDING ERECTION GUIDELINES STEP 6

1. In order to install advanced Guardrails in the lift above, our recommendation would be to use proprietary Scaffold Steps. It is recommended that both levels of Guardrail are installed at the same time using the Scaffold Step.

PROPRIETARY  
SCAFFOLD STEPS



ADVANCED GUARDRAIL  
USING RINGLOCK  
LEDGERS INSTALLED

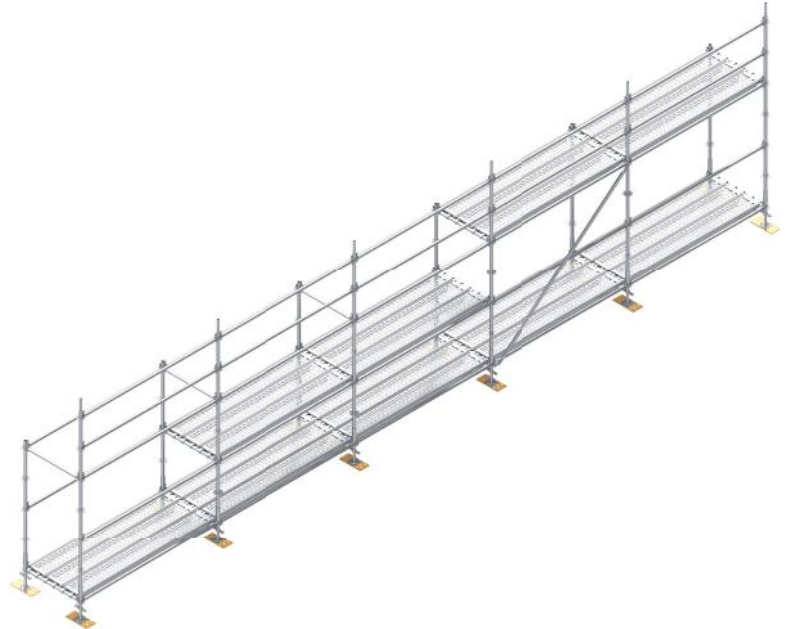


# RINGLOCK SAFETY MANUAL & USER GUIDES

## Erection Guidelines—Step 7

### SCAFFOLDING ERECTION GUIDELINES STEP 7

1. As an alternative, a temporary (dummy) lift could be installed 1.0m above the base of the scaffold. The scaffolders will then be able to stand at the correct height to safely install the Guardrails above the first working platform level.



### SCAFFOLDING ERECTION GUIDELINES STEP 8

1. If the temporary lift (Step 7) has been used then move Planks up to working lift, add the toeboards which slot behind the wedge. The erection is now complete.



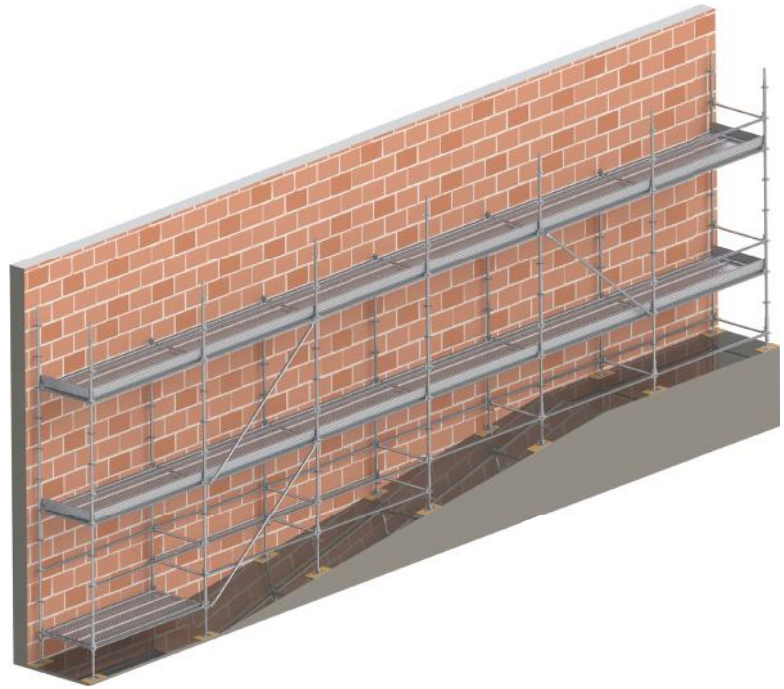


# RINGLOCK SAFETY MANUAL & USER GUIDES

## Shallow Slopes

### SHALLOW SLOPES:

1. Pick the highest ground level for the starting point to simplify later adjustment. Start with the Base Jack adjusting handle as near as possible to the bottom of the thread. This will allow maximum adjustment as the ground drops below the level of the first Sole Board.
2. When the ground is more than 500mm below highest ground level, set the Base Jack adjusting handle near to the bottom of the thread and fit the Base Collar. Introduce a Standard and wind up the thread on the Base Jack until the second rosette in the lift is level with the previous Standard. Introduce the Ledger to fix the Base jack, base Collar and Standard in place.
3. Continue down the slope positioning the adjusting handle on the Base Jack such that the Ledger always engages with the nearest Rosette to allow the Ledger to be level.



### STEEP SLOPES:

4. Depending on the nature of the ground and the steepness of the slope it may be necessary to use a Swivel Jack where the base plate can rotate to any angle up to 90 degrees.
5. It may be more appropriate to place scaffold boards continuously up the slope in place of an individual Sole Board. The Swivel Jacks may be fastened to this with suitable screws to avoid any slip between the two surfaces.
6. Continue with the erection of Ringlock scaffolding following items 1. to 3. above.



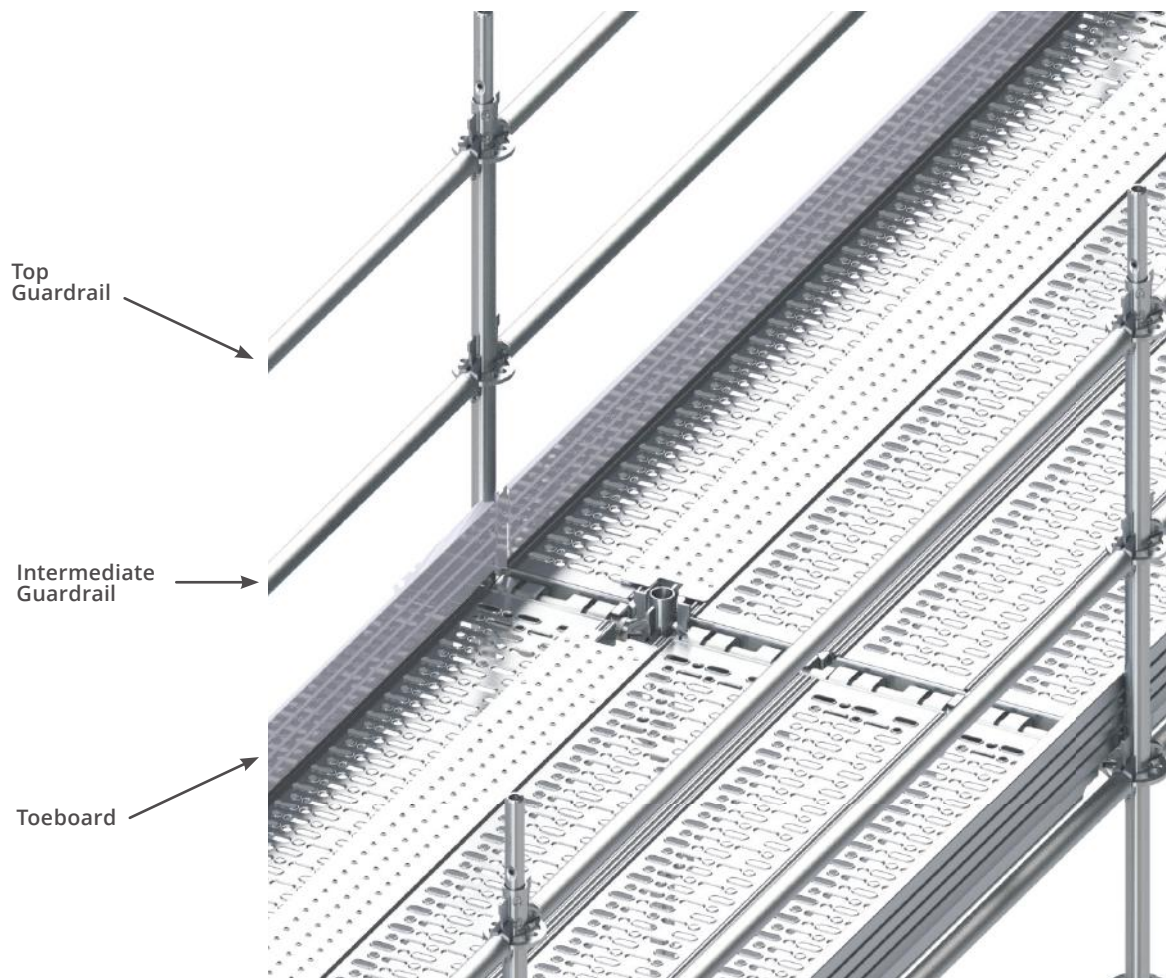
# RINGLOCK SAFETY MANUAL & USER GUIDES

## Three Part Side Protection

### THREE PART SIDE PROTECTION

In accordance with Health and Safety Regulations it is vitally important the scaffold user must maintain a three part side protection when using the working platform. This is easily achieved with Ringlock system scaffold.

The three part side protection consists of two Ledgers at 500mm and 1000mm above the working platform as Guardrails, and finished with a Toeboard to create the edge barrier.



# RINGLOCK SAFETY MANUAL & USER GUIDES

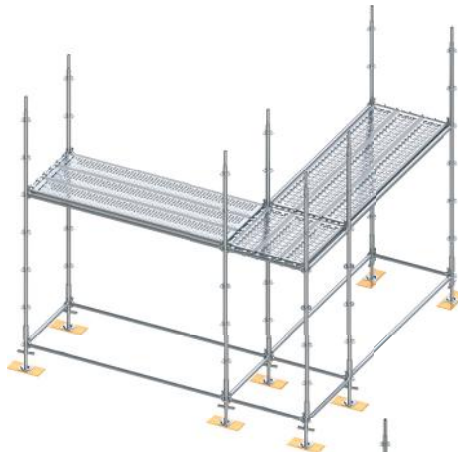
## Corner Solutions—Without Cantilever Platforms

### CORNER SOLUTIONS

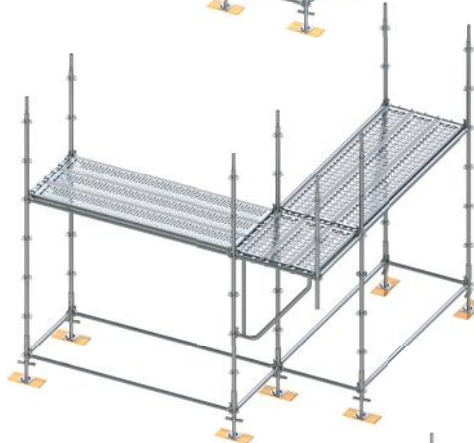
A corner can be created in many different ways. Please see the below examples for the most common solutions, when dealing with an internal or external corner it is imperative that a 3 part side protection is in place at all times. It is also important that scaffolds are tied to the adjacent structure and have sufficient bracing.

#### CORNER SOLUTIONS WITHOUT INTERNAL CANTILEVER PLATFORMS

This is the most basic layout for a corner. All Ledgers are present at the deck level and an internal Standard is used at the corner. A square bay is erected for the corner which can be either internal or external.



The outside Ledger at platform level has been replaced with a Console Bracket. In order to create the Guardrail a Standard is attached to the wedge casting on the Console Bracket. This minimizes the number of components in comparison to the layout above.



A fly by return is created by joining the scaffolds together anywhere along the span of the adjacent bay. By using a Truss Ledger at the Plank level the Planks can lock into the Truss Ledger at any point.



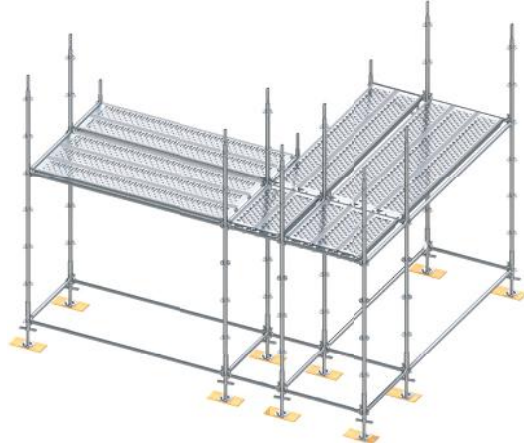
*Diagonal Bracing and Edge Protection removed for clarity.*

# RINGLOCK SAFETY MANUAL & USER GUIDES

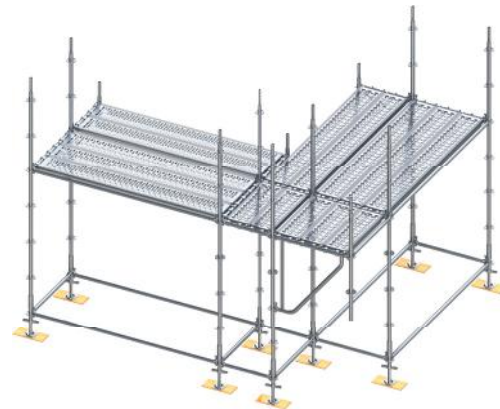
## Corner Solutions—With Cantilever Platforms

### CORNER SOLUTIONS WITH INTERNAL CANTILEVER PLATFORMS

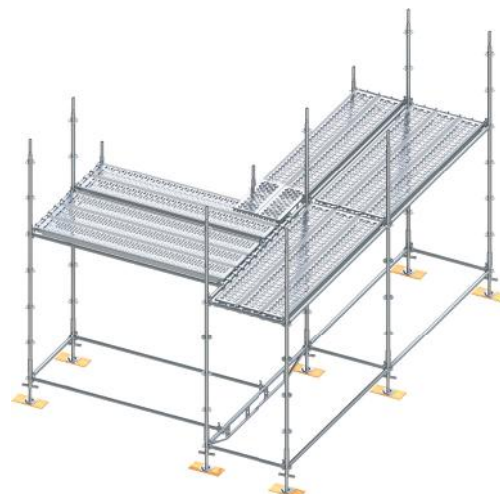
All Ledgers are present at the deck level and an internal Standard is used. An equivalent size bay to match the internal cantilever platform has been added. A fully closed corner has been developed with internal cantilevered platforms.



The outside Ledger at platform level has been replaced with a Console Bracket. In order to create the Guardrail a Standard is attached to the wedge casting on the Console Bracket. An equivalent size bay to match the internal cantilever platform has been added. A fully closed corner has been developed with internal cantilevered platforms and minimizes the number of components in comparison to the layout above.



A fly by return is created by joining the scaffolds together anywhere along the span of the adjacent bay. By using a Truss Ledger at the Plank level the Planks can lock into the Truss Ledger at any point. There may be a gap between the cantilevered boards which can be covered using the Gap Filler Plate or Gap Filler Plank depending on the length of the gap.



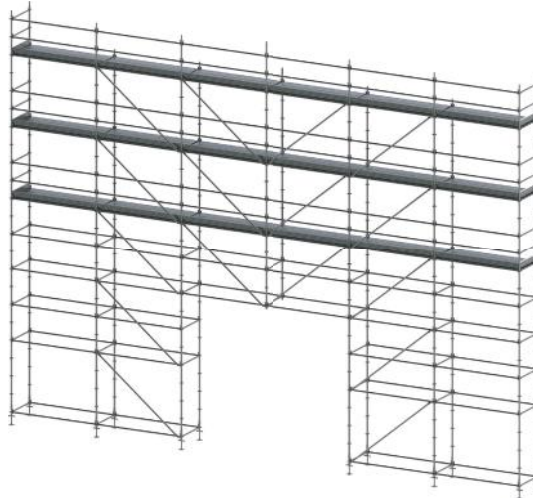
*Diagonal Bracing and Edge Protection removed for clarity.*

# RINGLOCK SAFETY MANUAL & USER GUIDES

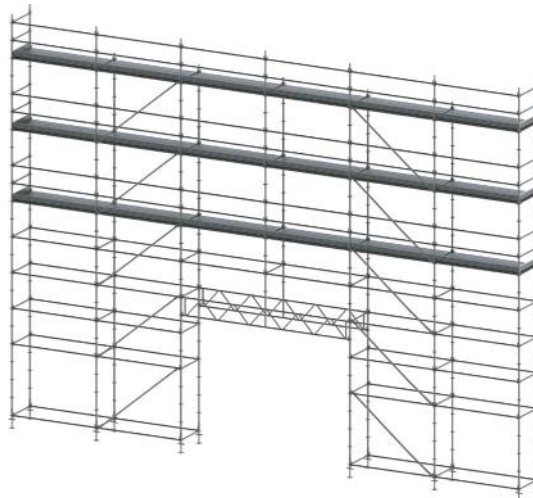
## Bridging Solutions

### BRIDGING SOLUTIONS

By using the common Ringlock components (Standards, Ledgers, Braces, Collar and Planks) you can easily create a bridge. The most common requirement for a bridge is to provide access under the scaffold for exits, door openings or underpasses for the construction works. In order to create a bridge, diagonal bay braces must be used to support the bridge section and stiffen the surrounding scaffold. Design advice is generally required for this type of arrangement.



For larger spans, higher loads and additional lifts above the opening, the Ringlock Lattice Girder can be used. The 500 deep Lattice Girder attaches directly to the rosettes. These Girders must be laced and braced on the chord only to prevent lateral displacement. Tube and fitting can be used or alternatively proprietary Ringlock Components. Design advice is generally always required for this type of arrangement.





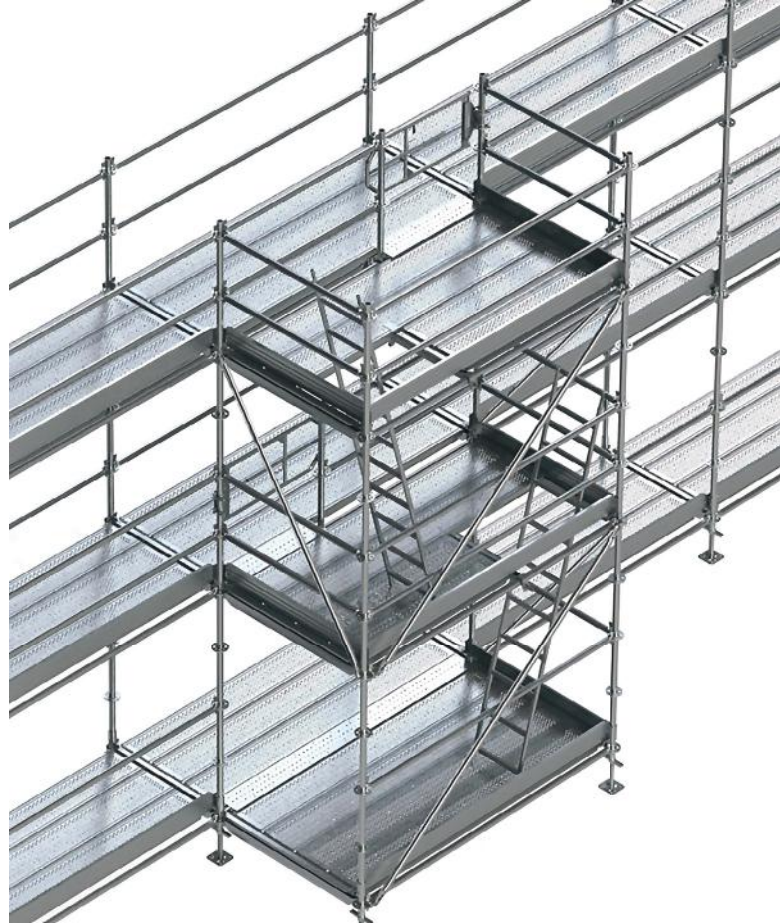
# RINGLOCK SAFETY MANUAL & USER GUIDES

## Ladder Access

### LADDER ACCESS

This is the ladder access solution that is most often used. It involves installing inclined ladders within the scaffold and securing them to a longitudinal Ledger near the bottom and to the Guardrail at the top. Methods of securing the ladder may include the use of AT-PAC ladder clips/hooks.

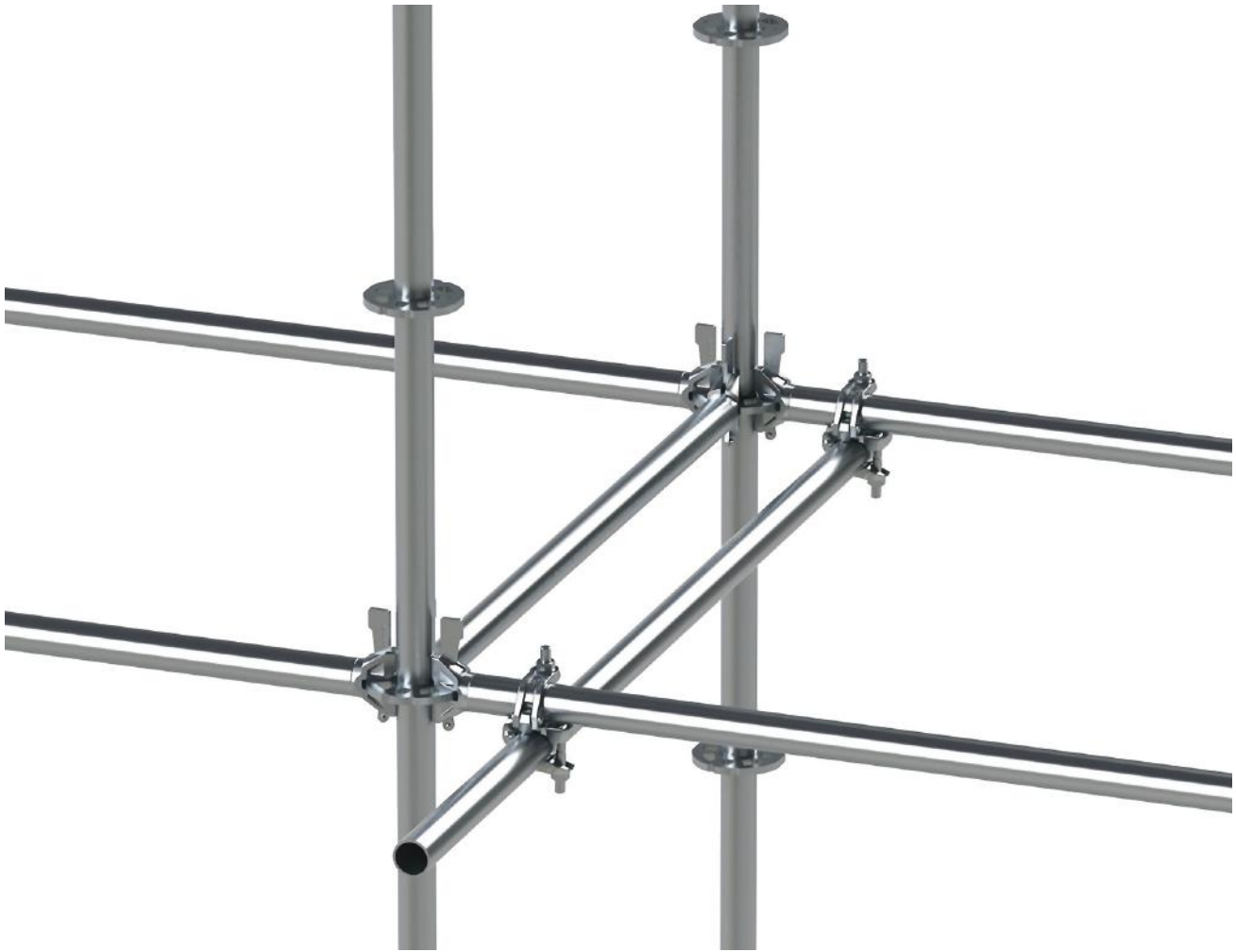
The ladder bay is usually erected at the same time as the access scaffold and is built following the Scaffold Erection Guideline Steps. The opening in the platform to receive the ladder is formed using a Ledger to Plank Transom and generally a Plank that is half the length of the bay. The usual opening width is two Planks and the opening should be at least 1.00m along the length of the platform to allow safe access up and down the ladder.



Ladders should be inclined at a 1 in 4 slope. It is recommended that the top part of the ladder should extend 1000mm above the landing platform to allow easy access on and off the rungs.

# RINGLOCK SAFETY MANUAL & USER GUIDES

## Methods of Stabilising Scaffolds—*Building Ties*



## METHODS OF STABILISING SCAFFOLDS—BUILDING TIES

An anchor is drilled and attached to the wall and is fastened to the tube with a proprietary fitting. Reference should be made to NASC documents TG4 and TG20 (latest edition) for typical tie and anchor details.

### RECOMMENDATIONS FOR STRAIGHT DOUBLE TIE

A straight double tie consists of a horizontal tube connected to the inside and outside Ledgers of the scaffold via right angle couplers, not more than 300mm horizontally from the Standard. The end of this tube connects to an appropriate anchor for the substrate of the supporting building/structure. This will transfer the forces from the scaffold directly to the supporting structure without overstress in the Ringlock components being used. Tie tube should be connected onto the Ledgers to ensure maximum headroom is achieved for the platform below.



# **RINGLOCK** **SAFETY MANUAL & USER GUIDES**

## **Guidelines to Dismantling Ringlock Scaffolds**

### **GUIDELINES TO DISMANTLING RINGLOCK SCAFFOLDS**

Dismantling of Ringlock is no different from most other types of scaffold. Generally, the dismantling procedure is the reverse of the erection procedure; the last component installed is the first to be removed.

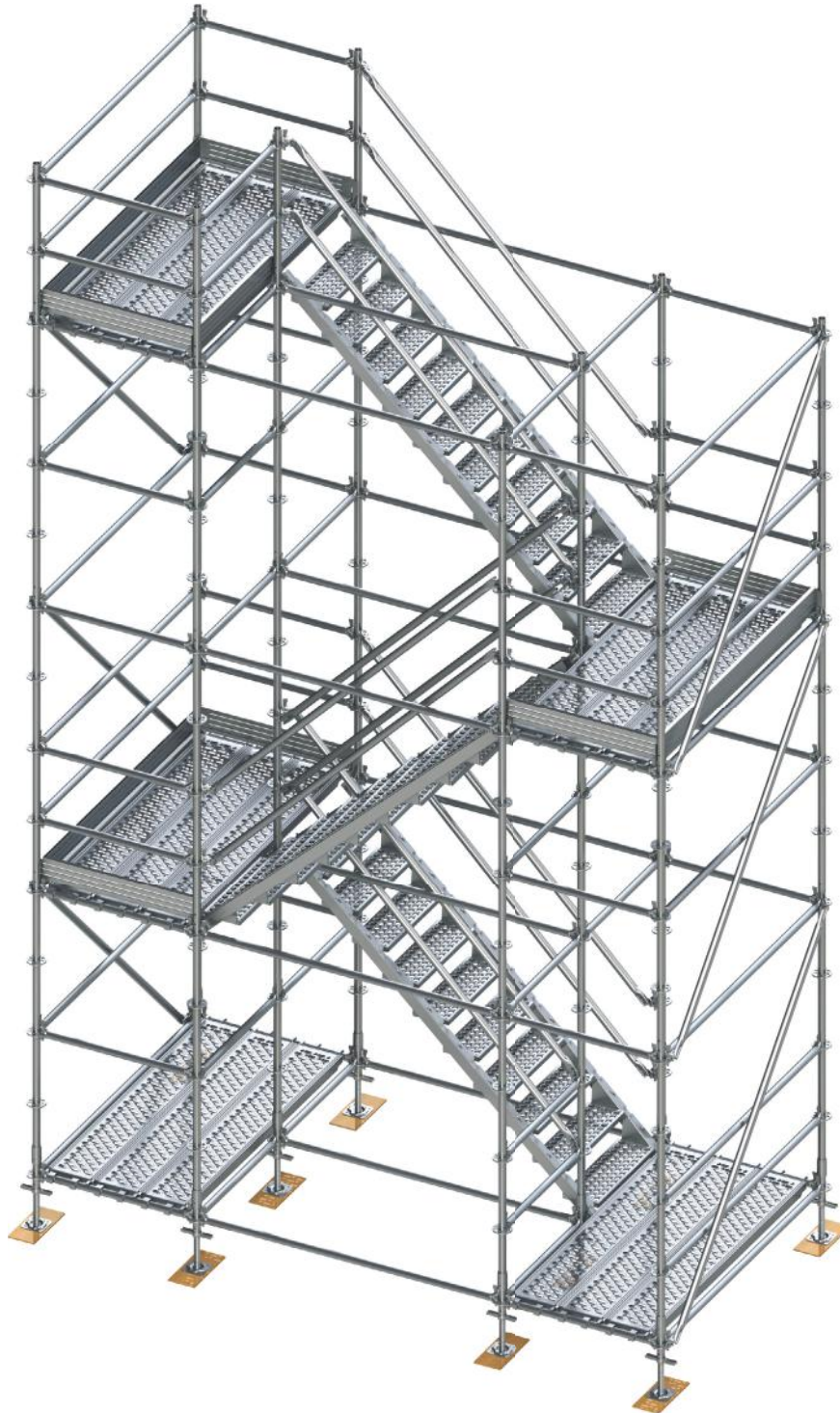
The following points are not to be considered as unique to Ringlock, but will provide you with a guide for safe practices.

- Prior to starting the dismantling, the Supervisor should meet with all the dismantling team of scaffolders to develop a safe plan of work which identifies, controls and/or removes all identifiable hazards. This should have formed part of the Risk Assessment.
- Control the traffic of site personnel and the general public in the area immediately below and around the scaffold as it is being dismantled. If necessary barricade the area.
- Ensure that all scaffolders have the correct personal protective equipment (PPE).
- Handle all components carefully so that they will not get damaged. The safety of those dismantling the scaffold and the public should take top priority during dismantling.
- Before starting the dismantling procedures, inspect the entire area where the scaffold is to be dismantled. Replace any components that have been removed. Pay very close attention to bracing and ties.
- Do not remove a scaffold tie until the scaffold components above the tie have been disassembled and lowered to the ground.
- Use temporary work platforms or loading platforms at each level.
- All scaffolders should be wearing safety harnesses and other appropriate PPE. Where necessary, harnesses should be attached to the scaffold at appropriate points (refer to Safety Harness Attachment Guidelines)
- Use ropes and slings to raise scaffold parts. Do not throw or bomb components.
- Inspect all components to ensure that each one is suitable and fit for purpose the next time it is used. Identify all damaged components by tagging or marking them conspicuously.
- These components should be kept separated and segregated from all the other components.

# RINGLOCK SAFETY MANUAL & USER GUIDES

## 10 Leg Stair Tower Erection Guidelines

### ERECTION GUIDELINES FOR RINGLOCK SYSTEM STAIR TOWER (10 LEG)



# RINGLOCK SAFETY MANUAL & USER GUIDES

## Stair Tower General Arrangement (10 Leg)

### STAIR TOWER GENERAL ARRANGEMENT (10 LEG)

The Ringlock Stair Tower makes access to your site safer and more convenient. The Stair Tower can be easily integrated within an existing scaffold or used independently. The stairs fit into 6' 6" (2.0m) lifts and if required, an entrance / exit can be made at each platform level.

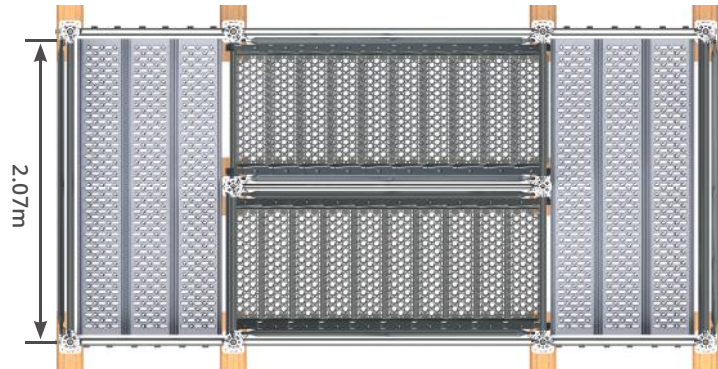
The Ringlock Steel Stair Tower is built from standard Ringlock system components with only two additional components needed to build your Stair Tower, these being the Stringer and the Treads. It is not normally necessary to erect the tower with a crane.

After the Stringers have been assembled, the Treads should be installed from bottom to top. Double Guardrails around the landings guarantee stability and safety. The landings are constructed from steel Planks and fitted out with Toeboards.

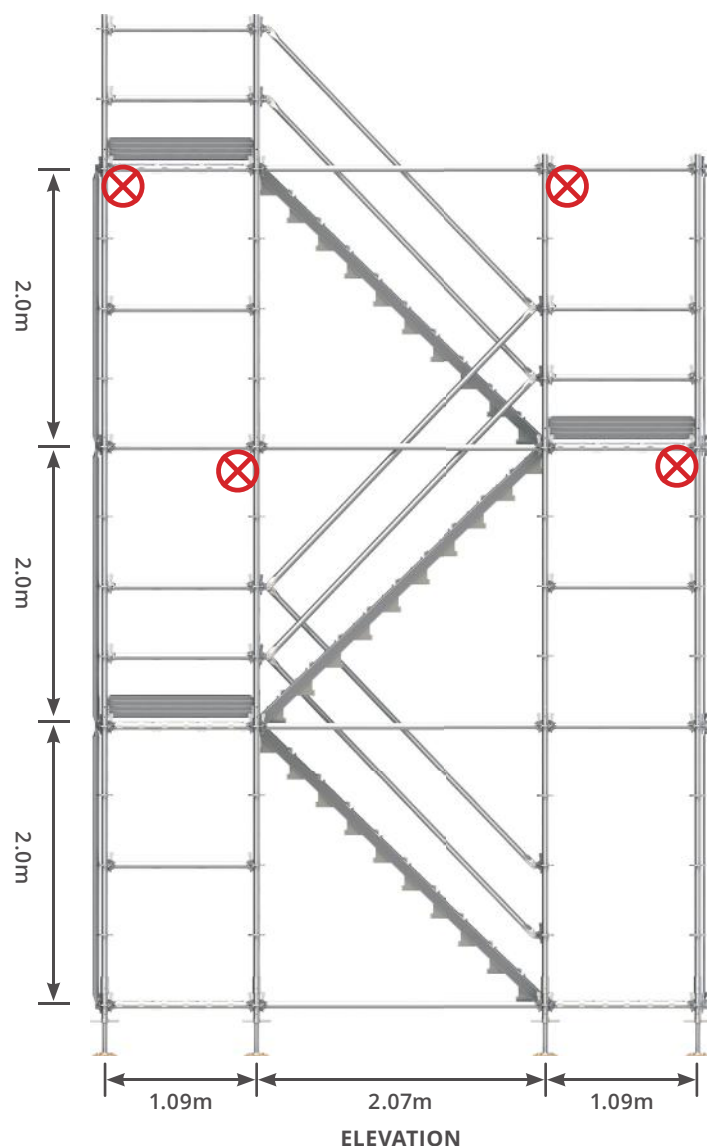
Every Ringlock Scaffold and Stair Tower needs to be tied to a rigid construction for stability depending on its height and least base dimension. At heights above 4.0m the Stair Tower needs to be fastened to the access scaffold or the permanent building/ structure every 4.0m vertically at the positions shown in red on the diagram opposite.

The stairs should always be tied at the top platform level.

Note: "⊗" denotes wall tie locations.



PLAN



ELEVATION

# **RINGLOCK** **SAFETY MANUAL & USER GUIDES**

## **Notes on Safe Use of Ringlock Stair Towers**

### **NOTES ON SAFE USE OF RINGLOCK STAIR TOWERS**

The notes on this page refer to both the 10 leg and 4 Leg Stair Towers:

- Before operatives can be allowed to use a Stair Tower, make sure that the Stair Tower has been erected properly in accordance with the following guidelines and that it complies with the demands of the user.
- Make sure that all people who are allowed access to the Stair Tower are aware of its function and the maximum allowable loads.
- The users of the stairs need to be aware that any changes to the scaffold must be properly engineered and erected in accordance with AT-PAC and the Building Regulations for landings and stair arrangements etc.
- It is recommended that routine checks form part of your everyday procedures to ensure that components have not been removed or have been incorrectly assembled after they had been removed.
- Use adequate signs and barriers to prevent people from entering incomplete Stair Towers.
- Make sure that each scaffold platform has safe entrances and exits, and that these entrances and exits are kept clear.
- Please note that because of Building Regulations requirements the Stair Tower is not suitable for Public access.



# RINGLOCK SAFETY MANUAL & USER GUIDES

## 10 Leg Stair Tower Erection Guidelines—Steps 1, 2 & 3

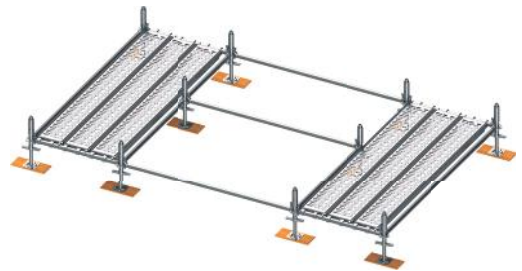
### STEP 1

1. Place the Base Collars over the Adjustable Screw Jacks.



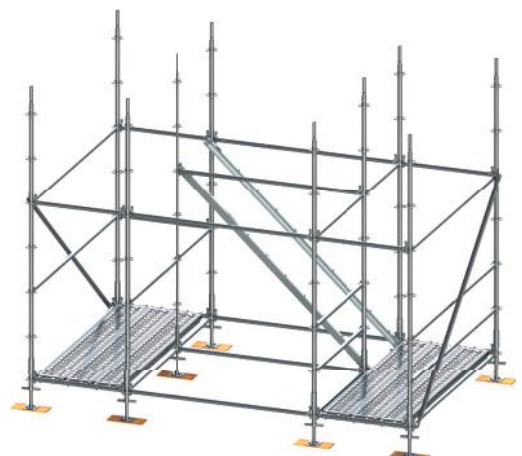
### STEP 2

1. Position the Adjustable Screw Jacks and assemble the Ledgers. Make sure that this setup is level. The Adjustable Screw Jacks can be used to level the components. Use wooden sole plates as necessary depending on the ground conditions. Where stairs are require to be set out on sloping ground, refer to setting out guidance on Page 20.
2. Put in place on both outside bays, three 320 mm wide steel Planks 2.07m long.



### STEP 3

1. Erect 3.0m Standards onto each base Collar and Jack and assemble the Ledgers and Transoms for the first lift. Also assemble the Braces on the two outer sides.
2. Next, assemble the Stair Stringers. These lock into the rosettes at the top and the bottom of the platforms and will also act as braces to each side of the scaffold tower as it is erected.
3. When the two Stringers are in place, the central core of the Tower will become significantly more rigid and ready to take all other components required to complete the Tower.

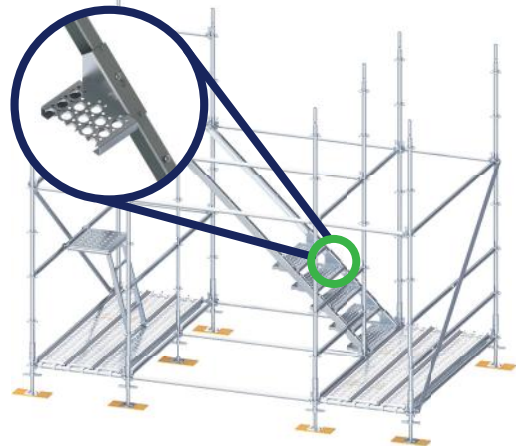


# RINGLOCK SAFETY MANUAL & USER GUIDES

## 10 Leg Stair Tower Erection Guidelines—Steps 4, 5 & 6

### STEP 4

1. Place the Stair Treads between the Stringers. Make sure that the pin on the Stringer fits exactly into the slot holes of the Tread. Secure the steps with a blow of a hammer.
2. Install advanced Guardrails in the lift above. Our recommendation would be to use proprietary Scaffold Steps and it is recommended that both levels of Guardrail are installed at the same time whilst the Scaffold Step is in place.



### STEP 5

1. Complete the stair by assembling all Stair Treads from bottom to top, Planks on the first landing, Guardrails along the stair and on the first landing, and Toeboards on the first landing.
2. Use the Scaffold Step to assemble a temporary platform and single advanced Guardrail such that this can be used to erect the second landing.
3. If necessary an opening can be left in this platform to allow access by ladder. The opening is formed using a Plank to Ledger Transom and a 1.09m Plank. If necessary follow the guidance provided in Ladder Access section.

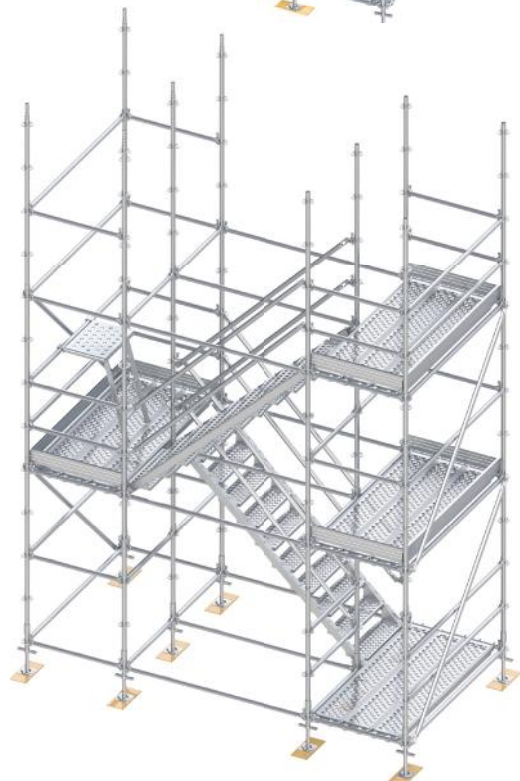
*THE TOWER IS NOW COMPLETE UP TO THE FIRST LIFT.*



### STEP 6

1. The second landing can be assembled by following the next consecutive steps:
  - Place the 3.0m Standards
  - Assemble the Ledgers
  - Assemble the Braces at the two outer sides
  - Assemble the Stringers
  - Assemble the Treads from bottom to top
  - Assemble the Planks on the next landing
  - Assemble the Guardrails along the stair and the next landing
  - Assemble the Toeboards

*THE TOWER IS NOW COMPLETE UP TO THE SECOND LIFT.*





# RINGLOCK SAFETY MANUAL & USER GUIDES

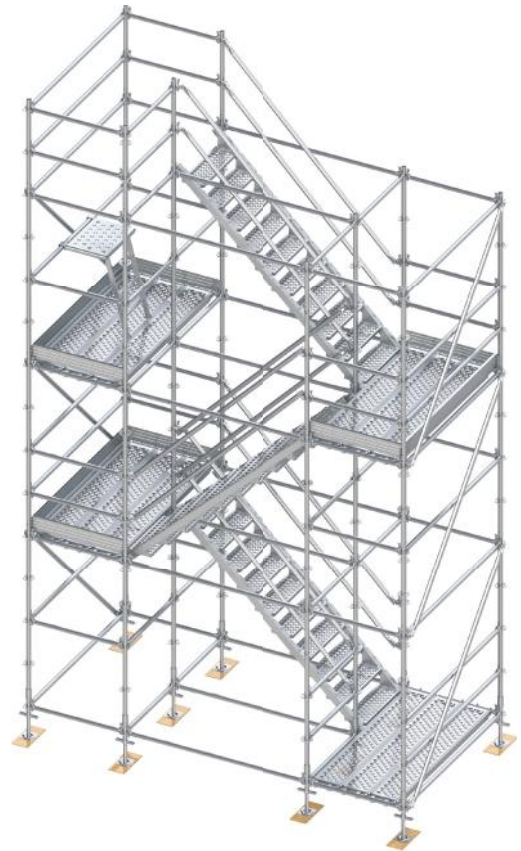
## 10 Leg Stair Tower Erection Guidelines—Steps 7 & 8

### STEP 7

1. The third landing can be assembled by the next consecutive steps:

- Place the 3.0m Standards
- Assemble the Ledgers
- Assemble the Braces at the two outer sides
- Assemble the Stringers
- Assemble the Treads from bottom to top

*ASSEMBLE THE PLANKS ON THE NEXT LANDING*

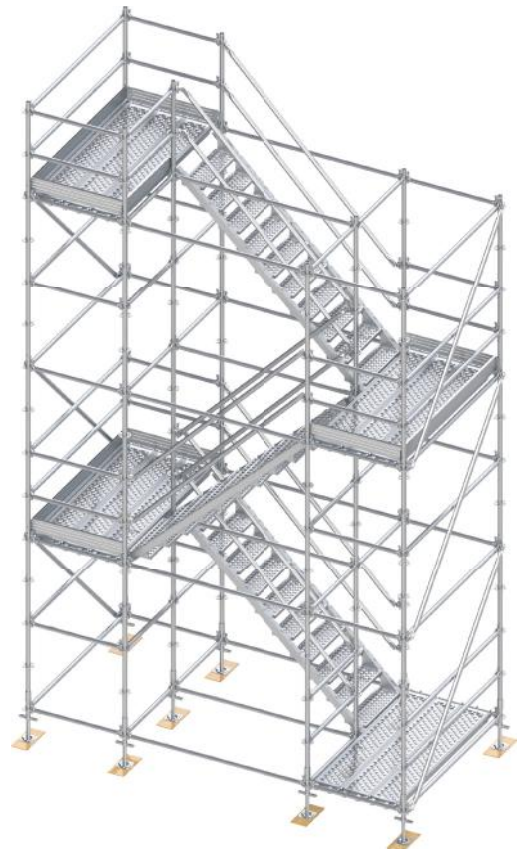


### STEP 8

The Stair Tower is complete after the assembly of 1m Standards on the third landing, Guardrails along the stair and on the third landing, and Toeboards on the third landing.

The tower is now complete up to the third lift. Continue with this method until the full height of the Stair tower is reached.

For notes on dismantling the Ringlock Stair Tower refer to Page 27.

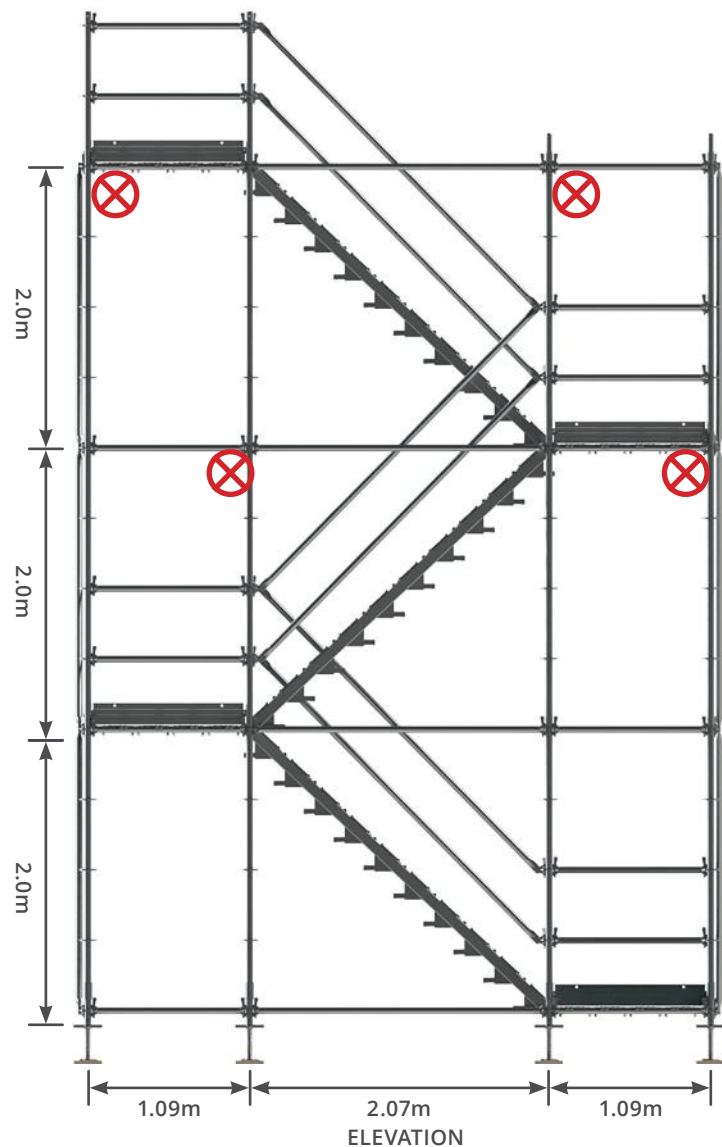
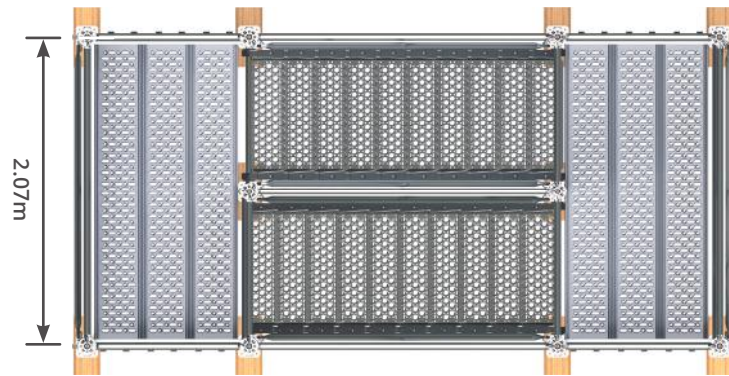


# RINGLOCK SAFETY MANUAL & USER GUIDES

## Ringlock 10-Leg Stair Tower Layout

### RINGLOCK STAIR TOWER (10 LEG) LAYOUT

The below detail is for a O-Type 10-Leg Stair Tower. See overleaf for a material list of both O and U-Type Stair Towers.



# RINGLOCK SAFETY MANUAL & USER GUIDES

## Ringlock 10-Leg Stair Tower Quantity List—O-Type

### STAIR TOWER (10 LEG) QUANTITY LIST—O-TYPE

The below tables illustrate the material requirements for an O-Type 10 Leg Stair Tower up to 6m high and the material required for each additional 2m lift above this height.

O TYPE 10 LEG STAIR TOWER (B=2.07 m, L=4.25m, H=6.0m)			
CODE	DESCRIPTION	TOWER (6.0m)	EVERY 2.0m
06.01.060.00	Base Jack	10	-
01.27.000.00	Base Collar	10	-
01.01.100.00	Standard with Crimped Spigot 1.0m	5	-
01.01.200.00	Standard with Crimped Spigot 2.0m	-	10
01.01.300.00	Standard with Crimped Spigot 3.0m	20	-
01.03.104.50	Ledger O-Type 1.04m	12	2
01.03.109.00	Ledger O-Type 1.09m	32	10
01.03.207.50	Ledger O-Type 2.07m	26	7
01.06.207.50	Bay Brace 2.0 x 2.07m	18	6
08.03.207.50	Steel Plank 320mm; O-Type 2.07m	16	4
08.09.104.50	Interlocking Toeboard 1.04m	1	-
08.09.207.50	Interlocking Toeboard 2.07m	3	1
08.09.109.50	Interlocking Toeboard 1.09m	6	2
15.01.207.00	Stair Stringer 2.07m	6	2
15.02.089.00	Stair Tread 1.04m	30	10

# RINGLOCK SAFETY MANUAL & USER GUIDES

## Ringlock 10-Leg Stair Tower Quantity List—U-Type

### STAIR TOWER (10 LEG) QUANTITY LIST—U-TYPE

The below tables illustrate the material requirements for a U-Type 10 Leg Stair Tower up to 6m high and the material required for each additional 2m lift above this height.

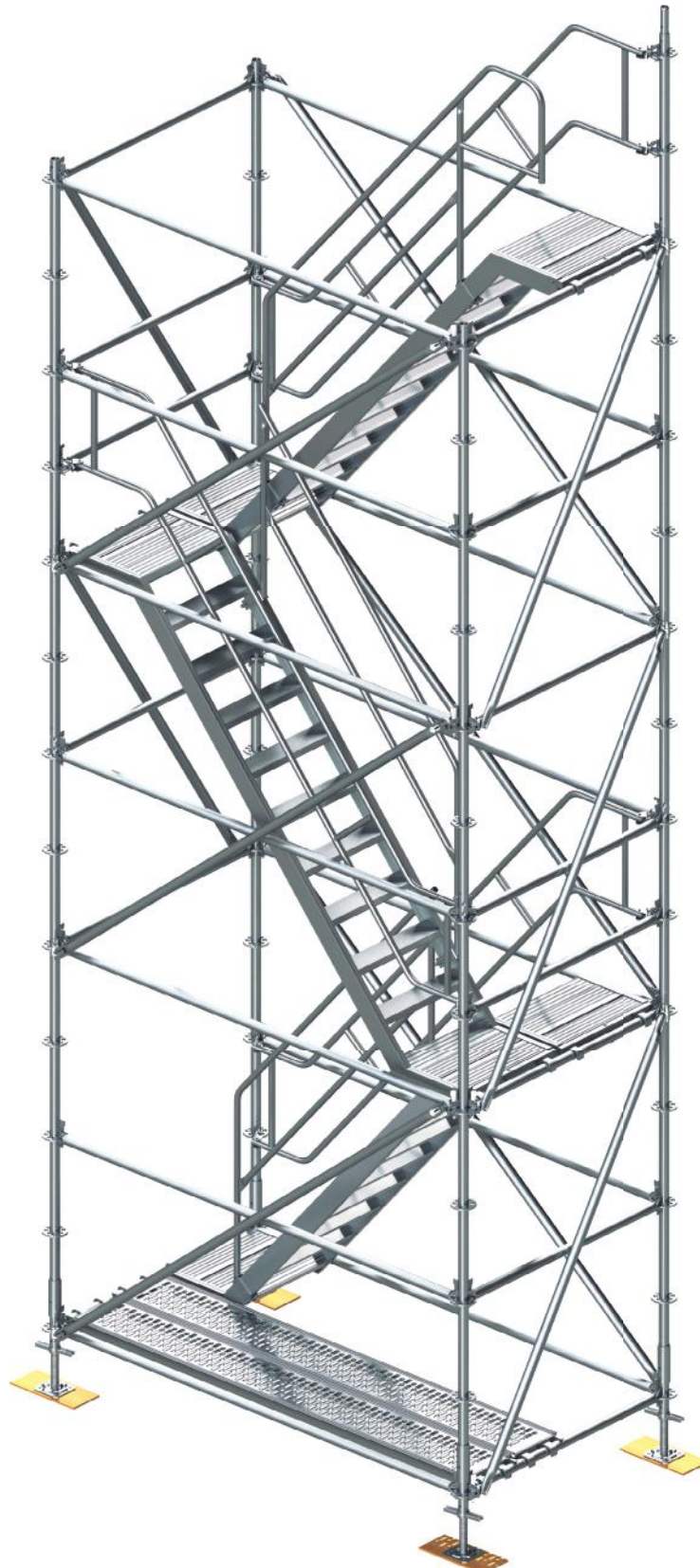
U TYPE 10 LEG STAIR TOWER (B=2.07 m, L=4.25m, H=6.0m)			
CODE	DESCRIPTION	TOWER (6.0m)	EVERY 2.0m
06.01.060.00	Base Jack	10	-
01.27.000.00	Base Collar	10	-
01.01.100.00	Standard with Crimped Spigot 1.0m	5	-
01.01.200.00	Standard with Crimped Spigot 2.0m	-	10
01.01.300.00	Standard with Crimped Spigot 3.0m	20	-
01.03.104.50	Ledger O-Type 1.04m	12	2
01.03.109.00	Ledger O-Type 1.09m	16	6
01.03.207.50	Ledger O-Type 2.07m	26	7
01.05.109.50	Ledger U-Type 1.09m	16	4
01.06.207.50	Bay Brace 2.0 x 2.07m	18	6
08.05.207.50	Steel Plank 320mm; U-Type 2.07m	16	4
08.11.109.50	Deck Lock 1.09m	6	4
08.09.104.50	Interlocking Toeboard 1.04m	1	-
08.09.207.50	Interlocking Toeboard 2.07m	3	1
08.09.109.50	Interlocking Toeboard 1.09m	6	2
15.01.207.00	Stair Stringer 2.07m	6	2
15.02.089.00	Stair Tread 1.04m	30	10



# RINGLOCK SAFETY MANUAL & USER GUIDES

## Aluminum Stair Tower Erection Guidelines

### ERECTION GUIDELINES FOR ALUMINIUM STAIR TOWER (4 LEG)





# RINGLOCK SAFETY MANUAL & USER GUIDES

## 4-Leg Aluminum Stair Tower General Arrangement

### STAIR TOWER GENERAL ARRANGEMENT (4 LEG)

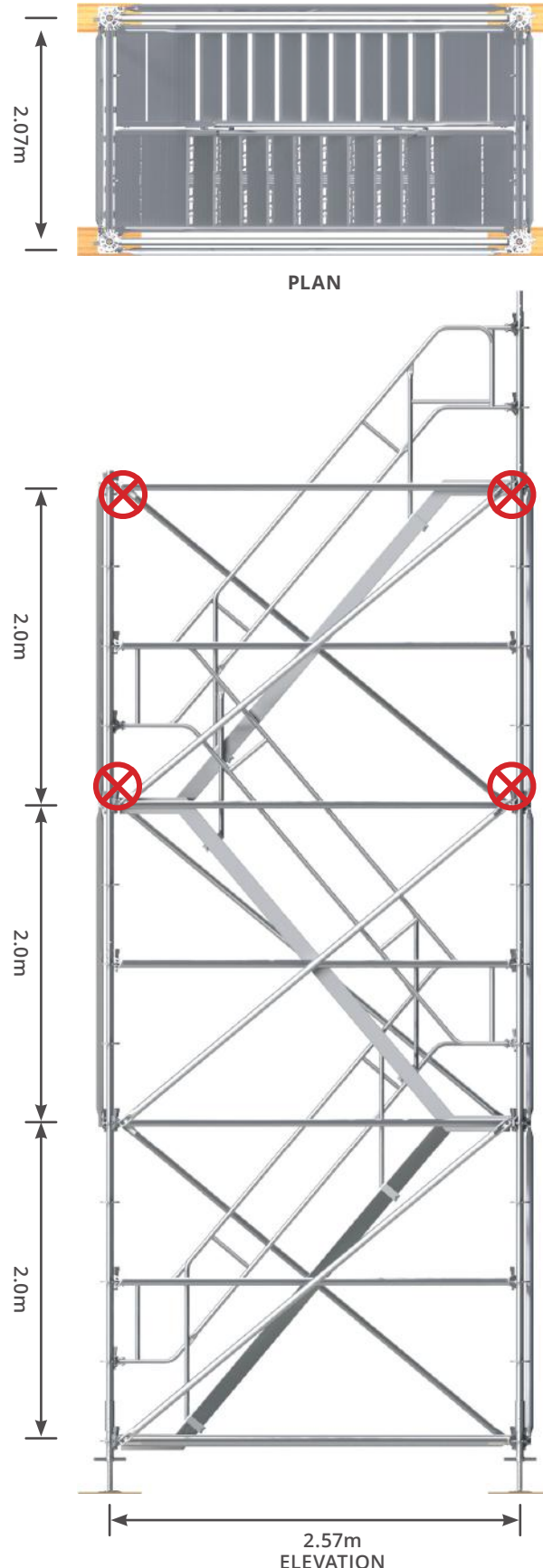
The Ringlock Platform Stair Tower makes access to your site safer and more convenient. The Stair Tower can be easily integrated within an existing scaffold, or used independently. The stairs fit into 2.0m lifts and if required, an entrance / exit can be made at each platform level.

The Ringlock Platform Stair Tower is built from standard Ringlock system components with only three additional components. These are the Aluminium Platform Stair, the Guardrails and Outer Guardrail Adaptor. It is not normally necessary to erect the tower with a crane.

After the 1.4m x 2.57m bay has been assembled, the Aluminium Platform Stairs should be installed from bottom to top. Double Guardrails around the landings guarantee stability and safety. The Guardrails for the Stairs fit onto the Ledgers.

Every Ringlock Scaffold and Stair Tower needs to be tied to a rigid construction for stability depending on its height and least base dimension. At heights above 4.0m the Stair Tower needs to be fastened to the access scaffold or the permanent building/structure every 4m vertically at the positions shown in red on the diagram opposite.

Also refer to TG20 (latest edition) concerning maximum allowable height to base ratios for independent scaffolds.



# RINGLOCK SAFETY MANUAL & USER GUIDES

## 4-Leg Stair Tower Erection Guidelines—Steps 1, 2 & 3

### STEP 1

Refer to notes on safe use of Ringlock Stair Towers.

1. Place the Base Collars over the Adjustable Screw Jacks.



### STEP 2

1. Position the Adjustable Screw Jacks and assemble the Ledgers. Make sure that this setup is level. The Adjustable Screw Jacks can be used to level the components. Use wooden sole plates as necessary depending on the ground conditions. Where stairs are required to be set out on sloping ground, refer to setting out guidance on Page 20.
2. Put in place two 320 mm wide steel Planks 2.57m long.



### STEP 3

1. Erect 3.0m Standards onto each base Collar and Jack and assemble the Ledgers and Transoms for the first lift. Also assemble the Braces on three faces of the bay, leave one brace off to allow access to the Platform Stairs.
2. Next, assemble the Platform Stair. These rest onto the Transom at the top and the bottom of the bay.

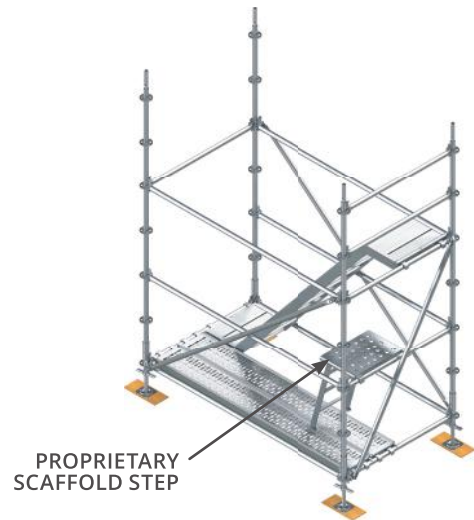


# RINGLOCK SAFETY MANUAL & USER GUIDES

## 4-Leg Stair Tower Erection Guidelines—Steps 4 & 5

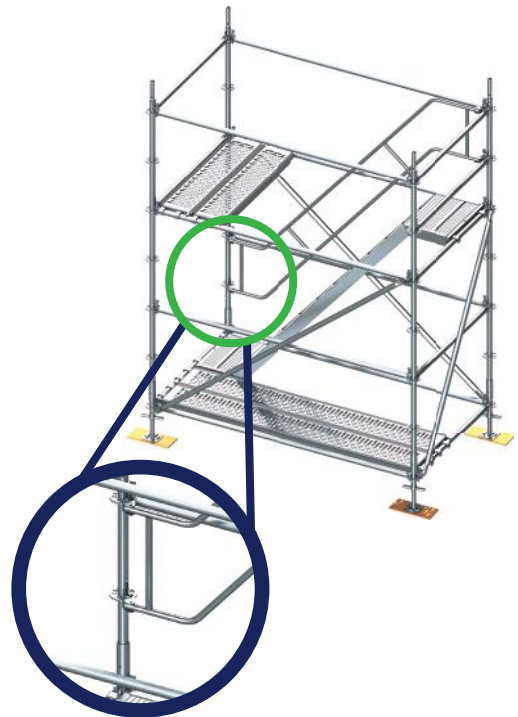
### STEP 4

1. Install advanced Guardrails in the lift above. Our recommendation would be to use proprietary Scaffold Steps and it is recommended that both levels of Guardrail are installed at the same time whilst the Scaffold Step is in place.
2. Install Single Guardrails all the way around the bay, reposition the Scaffold Step on the single guardrail accordingly.



### STEP 5

1. Attach the Outer Guardrail frame onto the first two Rosettes of the Standard closest to the base of the Platform Stairs. The Outer Guardrail has swivel Ledgerheads for this purpose (See Detail).
2. Repeat Item 1 at the top of the Outer Guardrail using the swivel Ledgerheads. Secure horizontal wedge with a blow of a hammer, this will prevent the Guardrail from lifting/ sliding.
3. Insert two Steel Planks 1.40m long to create a temporary platform.



# RINGLOCK SAFETY MANUAL & USER GUIDES

## 4-Leg Stair Tower Erection Guidelines—Steps 6 & 7

### STEP 6

The next assembly instructions require the temporary platform described in Step 5. It is recommended that the scaffolder uses a safety harness and 55 mm scaffold hook attached to a lanyard when traversing onto the temporary platform from the Platform Stairs. Care is required stepping across the large gap. Refer to section 'Safety Harness Connection Points' for more information. Reference to the HSE Work at Height Regulation and Safety Guidance Notes provided by the NASC is recommended.

1. From the available temporary platform assemble the next set of Standards.
2. Assemble the Ledgers and Transoms
3. Assemble Diagonal Braces on all outside faces of the bay.

**THE TOWER IS NOW READY TO ASSEMBLE THE NEXT LIFT.**



### STEP 7

1. Assemble the next Platform Stair to create the second lift, we recommend this is done using two scaffolders, one standing on the temporary platform and another on the kicker lift planks.
2. Ensure the anti-lift device is placed in the locked position on both Planks and Platform Stairs.

**Note:** If the 'U' System is being used assemble Deck Locks onto the Transoms on the base lift and the first lift.



# RINGLOCK SAFETY MANUAL & USER GUIDES

## 4-Leg Stair Tower Erection Guidelines—Steps 8, 9 & 10

### STEP 8

1. Assemble the Outer Guardrail which will sit on the Ledgers at the first and second lifts.
2. Move the temporary platform from the first temporary position to a new position above the first lift.

***THE TOWER IS NOW READY TO ASSEMBLE THE NEXT LIFT.***



### STEP 9

Using the temporary platform:

1. Assemble the Ledgers and Transoms
2. Assemble Diagonal Braces on all outside faces of the bay.



### STEP 10

1. Assemble the next Platform Stair to create the third lift; we recommend this is done using two scaffolders. This Platform Stair and any other above this will need to be maneuvered through the inside of the tower angled on its side, to allow it to fit through the spaces to the top of the tower.
2. Repeat items 2 and 3 from Step 7.





# RINGLOCK SAFETY MANUAL & USER GUIDES

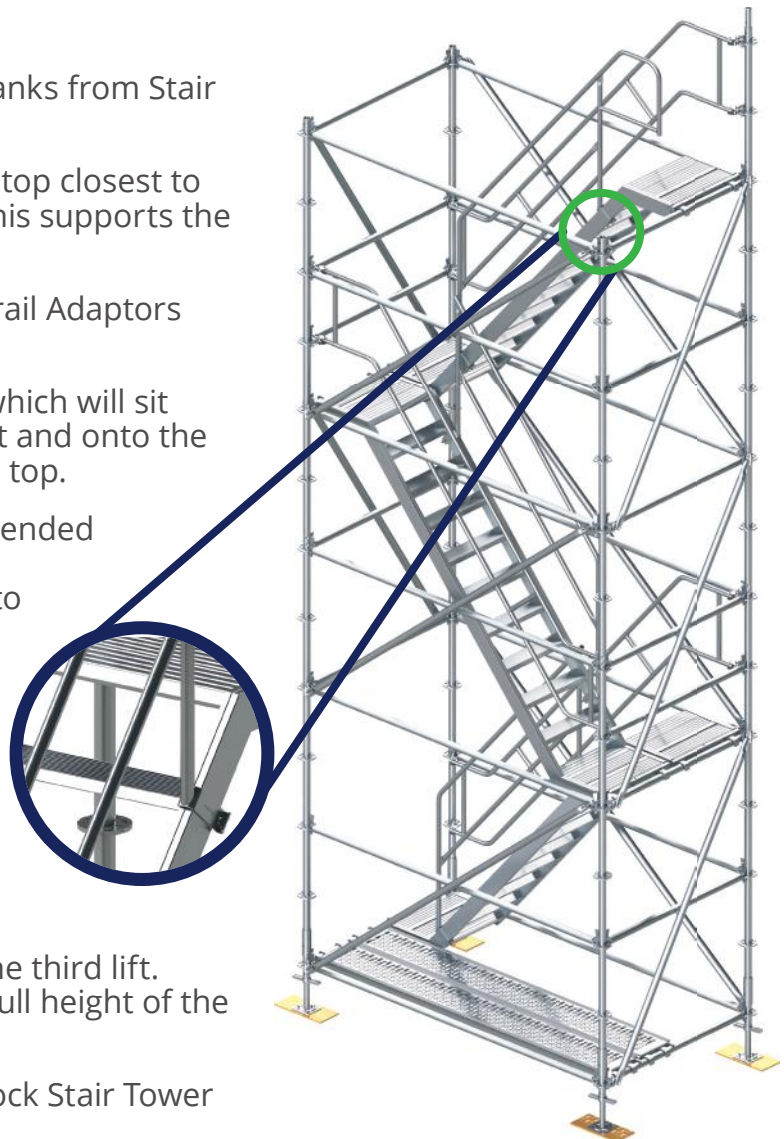
## 4-Leg Stair Tower Erection Guidelines—Steps 11

### STEP 11

1. Remove temporary platform Planks from Stair Tower.
2. Assemble 1.0m Standard at the top closest to the top of the Platform Stairs, this supports the Outer Guardrail for the final lift.
3. Assemble the two Outer Guardrail Adaptors onto the top Standard.
4. Assemble the Outer Guardrail which will sit on the Ledgers at the second lift and onto the Outer Guardrail Adaptors at the top.
5. Assemble Internal Guardrail Extended onto the top Platform Stairs, Assemble Internal Guardrail onto the rest of the Platform Stairs throughout the Tower. Use a typical scaffold Spanner to tighten the two bolts. Internal Guardrails are to be located on the internal side rail of the Platform Stairs directly underneath the second Tread (See detail).

The tower is now complete up to the third lift. Continue with is method until the full height of the Stair tower is reached.

For notes on dismantling the Ringlock Stair Tower refer to Page 27.

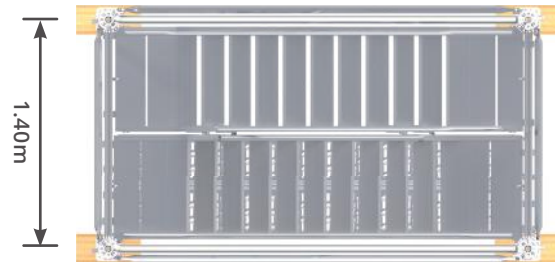


# RINGLOCK SAFETY MANUAL & USER GUIDES

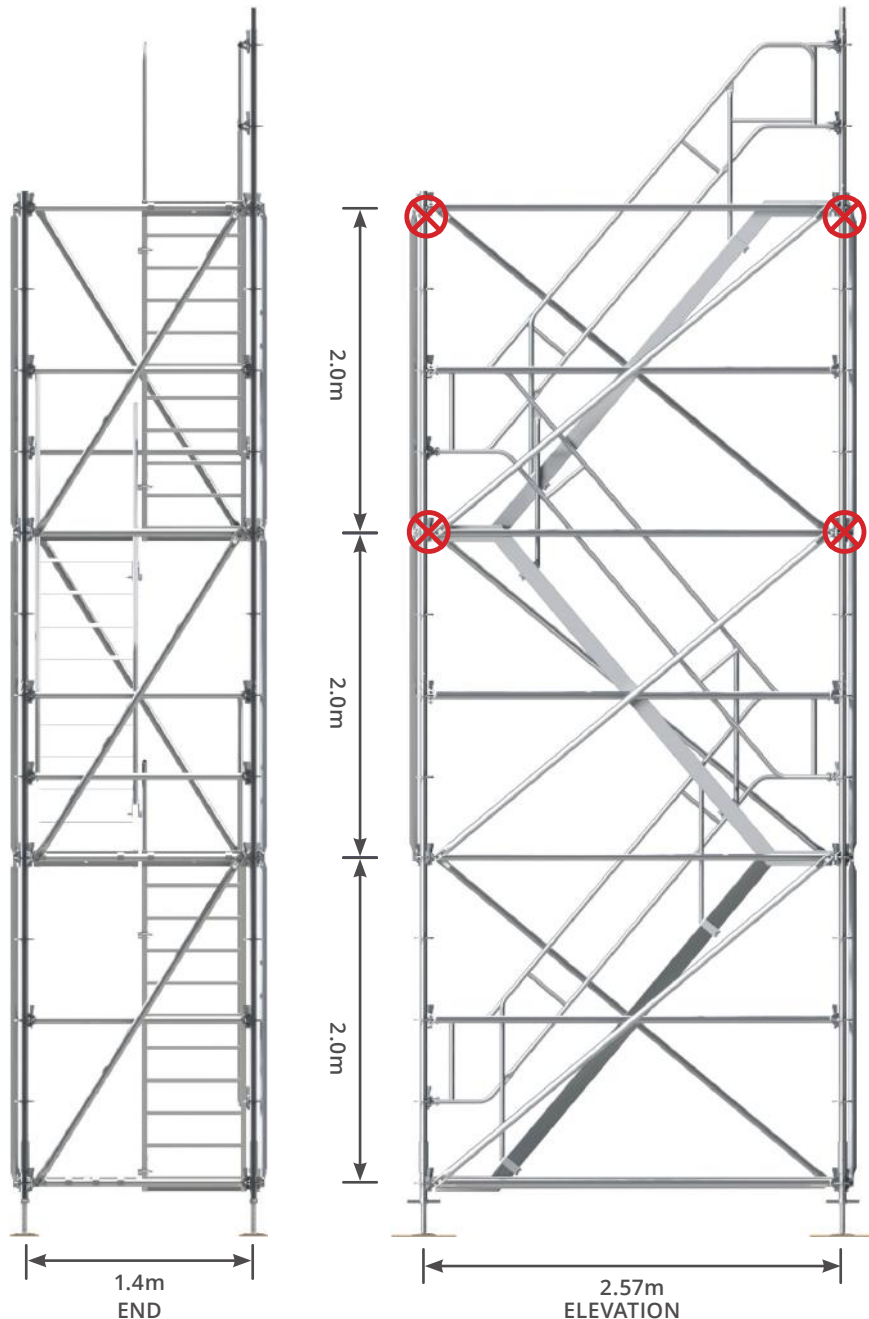
## Ringlock Aluminum Stair Tower (4-Leg) Layout

### RINGLOCK ALUMINIUM STAIR TOWER (4 LEG) LAYOUT

The below detail is for a O-Type 4 Leg Stair Tower, see overleaf for a material list of both O and U-Type Stair Towers.



PLAN



1.4m  
END

2.57m  
ELEVATION

# RINGLOCK SAFETY MANUAL & USER GUIDES

## Aluminum (4 Leg) Stair Tower Quantity List—O-Type

### RINGLOCK STAIR TOWER (4 LEG) QUANTITY LIST—O-TYPE

The below tables illustrate the material requirements for an O-Type 4 Leg Stair Tower up to 6m high and the material required for each additional 2m lift above this height.

MATERIAL LIST—O TYPE 4 LEG STAIR TOWER (B=1.4m, L=2.57m, H=6.0m)			
CODE	DESCRIPTION	TOWER (6.0m)	EVERY 2.0m
06.01.060.00	Base Jack	4	-
01.02.000.00	Base Collar	4	-
01.01.100.00	Standard with Crimped Spigot 1.0m	1	-
01.01.200.00	Standard with Crimped Spigot 2.0m	-	4
01.01.300.00	Standard with Crimped Spigot 3.0m	8	-
01.03.140.50	Ledger O-Type 1.40m	15	5
01.03.257.50	Ledger O-Type 2.57m	14	2
01.06.140.50	Bay Brace 2.0 x 1.40m	5	2
01.06.257.50	Bay Brace 2.0 x 2.57m	6	2
08.03.140.50	Steel Plank 320mm; O-Type 1.40m	2	-
08.03.257.50	Steel Plank 320mm; O-Type 2.57m	2	-
16.01.257.50	O Platform Stair 2.57m	3	1
16.07.000.00	Outer Guardrail Adaptor	4	-
16.06.257.50	Outer Guardrail 2.57m	3	1
16.08.000.50	Inner Guardrail	2	1
16.05.257.50	Inner Guardrail Extended	1	-

# RINGLOCK SAFETY MANUAL & USER GUIDES

## Aluminum (4 Leg) Stair Tower Quantity List—U-Type

### RINGLOCK STAIR TOWER (4 LEG) QUANTITY LIST—U-TYPE

The below tables illustrate the material requirements for a U-Type 4 Leg Stair Tower up to 6m high and the material required for each additional 2m lift above this height.

MATERIAL LIST—U TYPE 4 LEG STAIR TOWER (B=1.4m, L=2.57m, H=6.0m)			
CODE	DESCRIPTION	TOWER 6.0m	EVERY 2.0m
06.01.060.00	Base Jack	4	-
01.02.000.00	Base Collar	4	-
01.01.100.00	Standard with Crimped Spigot 1.0m	1	-
01.01.200.00	Standard with Crimped Spigot 2.0m	-	4
01.01.300.00	Standard with Crimped Spigot 3.0m	8	-
01.03.140.50	Ledger O-Type 1.40m	7	3
01.03.257.50	Ledger O-Type 2.57m	14	2
01.05.140.50	Reinforced Ledger U-Type 1.40m	8	2
01.06.140.50	Bay Brace 2.0 x 1.40m	5	2
01.06.257.50	Bay Brace 2.0 x 2.57m	6	2
08.03.140.50	Steel Plank 320mm; O-Type 1.40m	2	-
08.05.257.50	Steel Plank 320mm; U-Type 2.57m	2	-
08.11.140.50	Deck Lock 1.40m	4	1
16.02.257.50	U Platform Stair 2.57m	3	1
16.07.000.00	Outer Guardrail Adaptor	4	-
16.06.257.50	Outer Guardrail 2.57m	3	1
16.08.000.50	Inner Guardrail	2	1
16.05.257.50	Inner Guardrail Extended	1	-

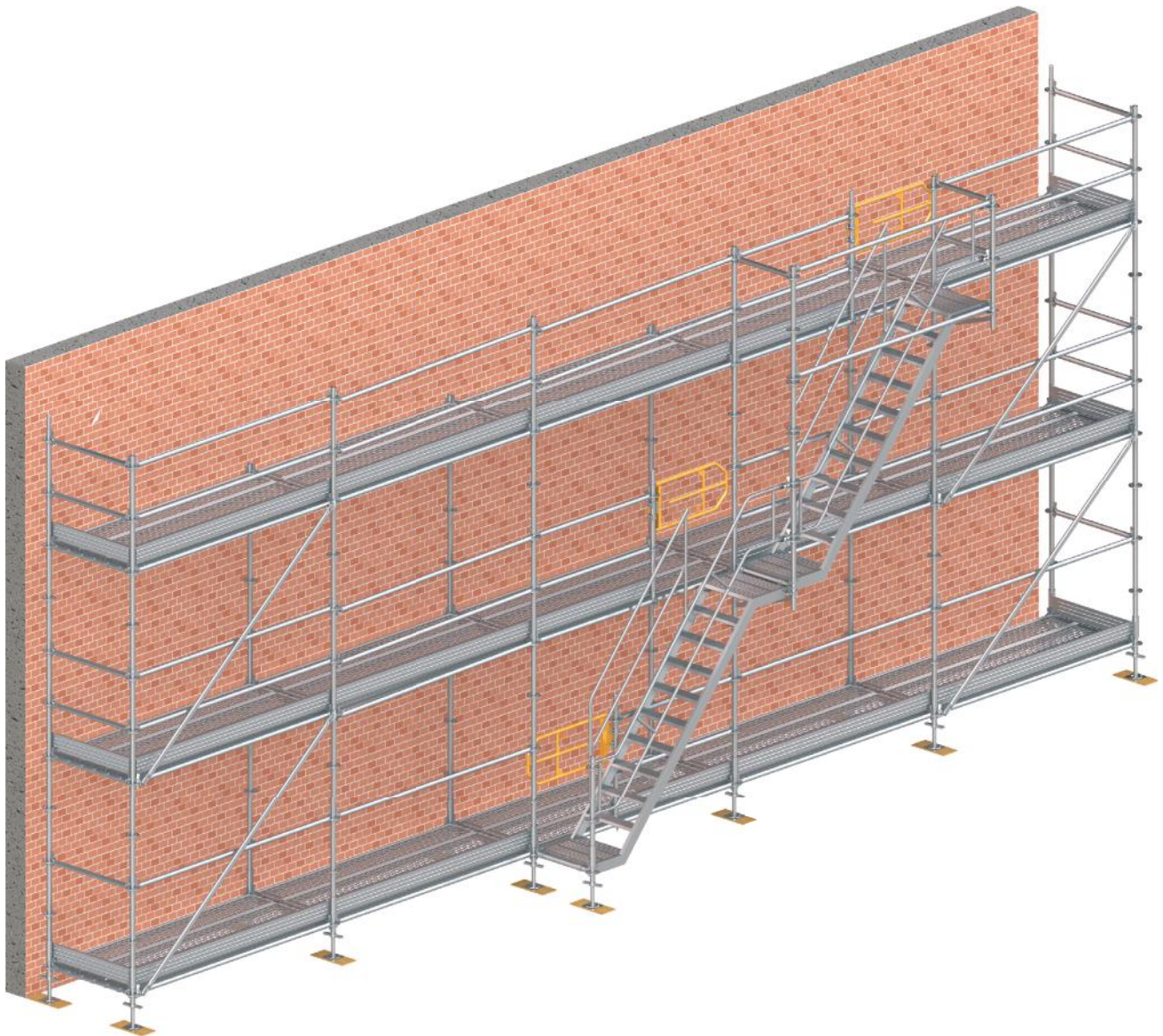


# RINGLOCK SAFETY MANUAL & USER GUIDES

## Alternative Platform Stair Access

### ALTERNATIVE PLATFORM STAIR ACCESS

This is an example of an alternative Aluminium Platform Stair Tower using parallel Stairs. As an alternative to both 10 Leg and 4 Leg Stair Towers this Stair access can be attached to the façade using Side Brackets. For more information on the Aluminium Platform Stairs please contact your local AT-PAC office.



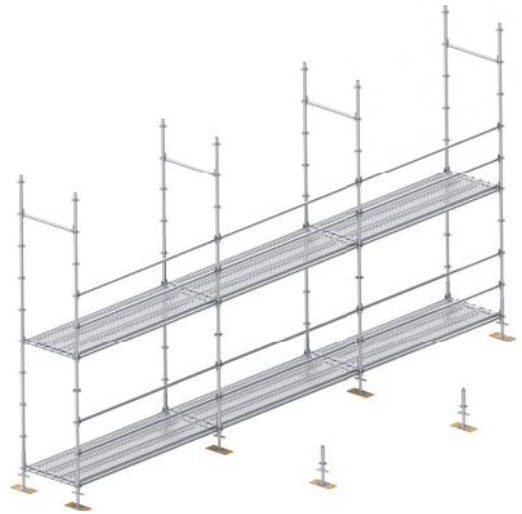


# RINGLOCK SAFETY MANUAL & USER GUIDES

## Loading Tower Erection Guidelines—Steps 1 & 2

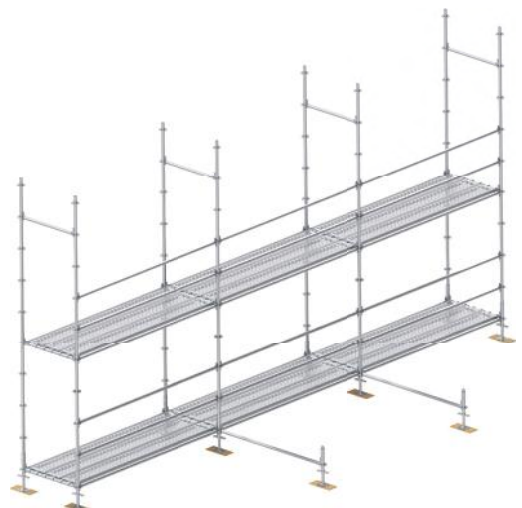
### STEP 1

1. Refer to Erection Guideline for Ringlock Scaffolding before commencing work. The Loading Tower is 3.07m wide and 2.07m deep and must be erected alongside a 3.07m long bay in the main scaffold.
2. Prepare the foundation for the Loading Tower.
3. Install Base Collars on the Adjustable Screw Jacks, and set them out approximately 2.0m from the face of the scaffold and roughly in position with their corresponding Ledgers. The rosette on the Base Collar must be at least 180mm above ground level for all the components to fit and adjustment of the main scaffold may be needed if it is lower than this dimension.
4. The Base Jack must be located centrally on sole plates.
5. Align the Base Collar rosettes so that one of the small openings in the rosette points in the Ledger direction. The small openings at right angles to the first will automatically align the side Ledgers at 90 degrees.



### STEP 2

1. Connect 2.07m Ledgers to the rosette on the Base Collar and attach these to the corresponding rosettes on the main scaffold. Do not hammer in the wedges at this stage.

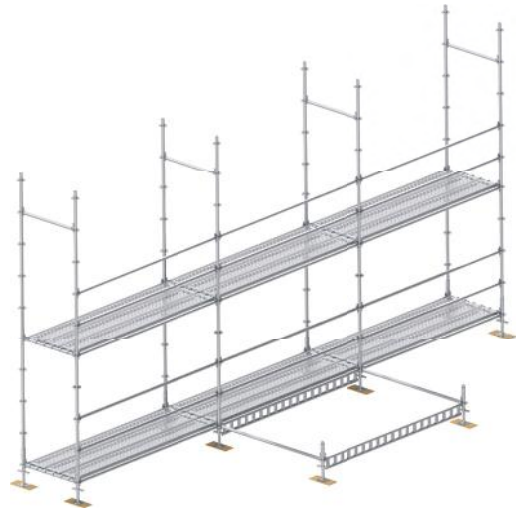


# RINGLOCK SAFETY MANUAL & USER GUIDES

## Loading Tower Erection Guidelines—Steps 3 & 4

### STEP 3

1. Connect 3.07m Loading Tower Transom between the Base Collars and square up the bay to the main scaffold.
2. Replace the 3.07m Ledger on the main scaffold with a Loading Tower Transom.
3. Using a spirit level, adjust the Jacks so that the 2.07m Ledgers and outer Loading Tower Transom are horizontal and level with the main platform. Accuracy in leveling at this stage eliminates the need for further leveling and plumbing as the Loading Tower is erected.



### STEP 4

1. Place nine 2.07m Planks (320mm wide) onto the top tube of the Loading Tower Transom and arrange such that any gap each side is even.
2. If necessary carry out minor adjustments to the position of the Jacks and Base Collar by pushing one Jack sideways in order that the Planks are parallel with the Ledgers. Only a small amount of movement may be needed to ensure the bay is square enough to lock down the Planks with Deck Locks.
3. When you are satisfied that the scaffold is fully squared and levelled, hammer in the wedges.
4. Ringlock Standards can be positioned into the outer Base Collars. The bottom of the Standards fit into the socket tube at the top of the Base Collar. The Spigot on the Standards always point upwards.



# RINGLOCK SAFETY MANUAL & USER GUIDES

## Loading Tower Erection Guidelines—Steps 5 & 6

### STEP 5

1. Place Guardrails using 2.07m Ledgers at each height on the sides of the Loading Tower



### STEP 6

1. In order to install advanced Guardrails in the lift above, our recommendation would be to use proprietary Scaffold Steps. It is recommended that both levels of Guardrail are installed at the same time using the Scaffold Step.
2. Replace the 3.07m Ledger at the first lift on the main scaffold with a Loading Tower Transom. The Scaffold Steps may assist with this operation.
3. Install the outer 3.07m Loading Tower Transom in a similar manner.
4. Install the braces on each side of the bay.
5. 2.07m Toeboards may also be placed each side of the bay.



# RINGLOCK SAFETY MANUAL & USER GUIDES

## Loading Tower Erection Guidelines—Steps 7 & 8

### STEP 7

1. Place the Loading Tower Gate over the top of the side Guardrails and slide to the front of the Loading Tower platform. Ensure the two Clips on each side of the Gate are facing inwards.
2. Fasten the fulcrum hinge of the Loading Tower Gate loosely to the top of the side Guardrail, with a half coupler each side of the Brace. Offer the Ledgerheads at the front of the Arm up to the Clips on the Gate. Locate in position using the wedges.
3. When the Gate and Arms are fastened securely and located correctly at the front of the Loading Tower, the half couplers on the fulcrum hinge can be tightened and the wedges driven home.



### STEP 8

1. Place nine 2.07m Planks (320mm wide) onto the top tube of the Loading Tower Transom and arrange such that any gap each side is even
2. Repeat Steps 6, 7 and 8 adding more Standards as the lifts progress upwards.
3. For notes on dismantling the Ringlock Loading Tower refer to page 27.



# RINGLOCK SAFETY MANUAL & USER GUIDES

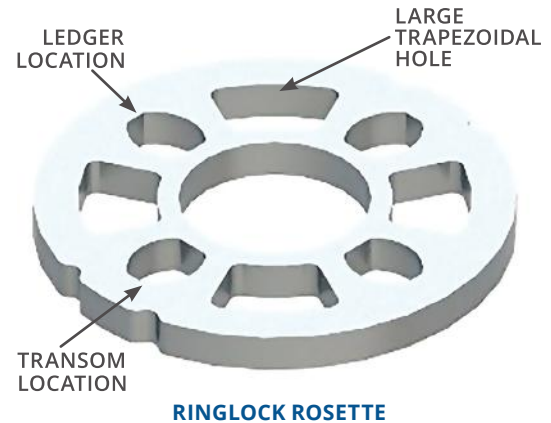
## Safety Harness Connection Point

### SAFETY HARNESS CONNECTION POINT

The following guidelines are provided to help you select the most appropriate locations for attaching a harness to Ringlock scaffolding.

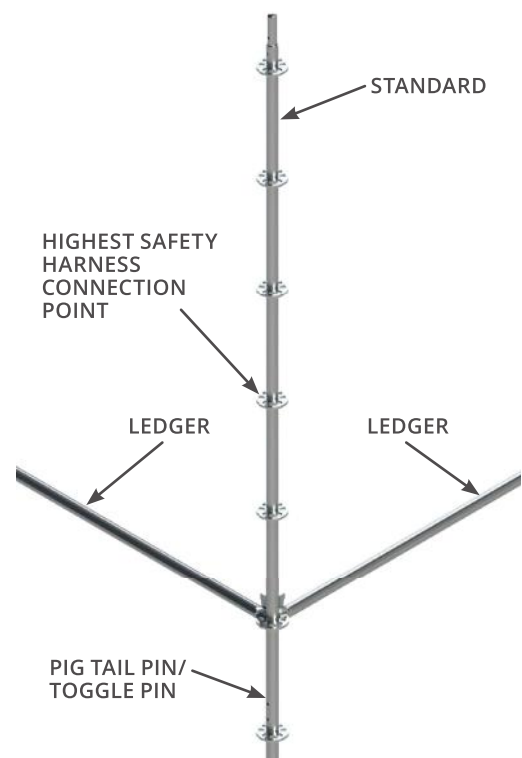
The guidelines presented in this document do not replace established Health and Safety guidelines. Refer to the Work at Height Regulations and Safety Guidance Notes provided by the NASC where necessary.

- The rosette on a Standard is a proper connection point for the Scaffold Hook attached to a Lanyard. The Standard must be continuous to the base plate. No more than one person per 6'6" (2.0m) lift can be attached to a single Standard.
- The Scaffold Hook attached to a Lanyard must only be connected to the large trapezoidal holes to provide a suitable anchor point for the appropriate safety harness.
- DO NOT attach the safety harness lanyard to itself around a Standard because the edge of the rosette may cut the fabric or it may slip over the rosette to the next lower rosette increasing the fall distance.



### CONNECTION TO A STANDARD

To ensure a positive connection is created it is recommended that joints between Standards are pinned together (ensure site/local regulations and current Legislation are followed). A scaffolder can connect to any rosette up to the second rosette above the Ledgers.





# RINGLOCK SAFETY MANUAL & USER GUIDES

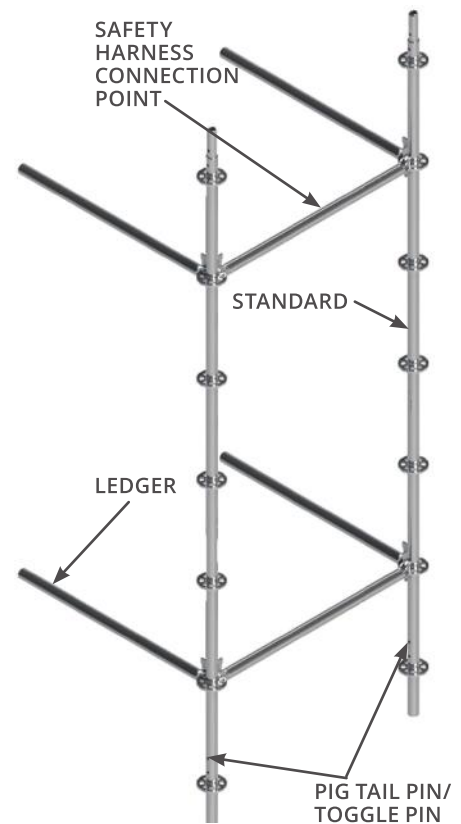
## Connection to a Ledger

### CONNECTION TO A LEDGER

The Ledger is a proper connection point for the Scaffold Hook attached to a Lanyard. It is recommended that no more than one scaffolder be attached to any Ledger at the same time.

Both Ledger ends must be attached with tightened wedges to a Standard that is supported by two or more Ledgers attached to the same rosette. To ensure a positive connection is created it is recommended that joints between Standards are pinned together (ensure site local regulations and current Legislation are followed).

1. Diagonal braces must be installed as per AT-PAC recommendations and/or engineering design and they must be installed as the scaffold is erected. Diagonal braces may not be used as harness connection points.
2. Free fall distance should be limited to 6'6" (2.0m) or less in accordance with current Safety Guidelines for the specific conditions of the fall hazard. In addition, the scaffold-specific fall protection plan should ensure that all fall zones are clear and unobstructed and that an effective scaffolder rescue plan has been developed that can be mobilized quickly in the event that an arrested fall incident occurs.
3. All persons using fall protection systems must be trained in the proper installation and safe use of fall protection equipment, as required by OSHA Work at Height Regulations.
4. Contractors and their employees must comply with the OSHA Work at Height Regulations.
5. Scaffolders should use an appropriate safety harness at all times such that the individual stays fully protected from falling when working at heights above that required by fall protection regulations
6. Scaffolders should hook on immediately after stepping off a ladder or other means of access. AT-PAC recommends the use of a properly installed Davit Arm and retractable lanyard to ensure that workers are tied-off while climbing exterior vertical scaffold ladders.
7. When it is necessary to reach below the single guardrail (e.g. fixing bracing or handling other materials).
  - **Clip to:**
    - Available and adequate steelwork.
    - Standards, but refer to "Safety Harness Attachment Guidelines".



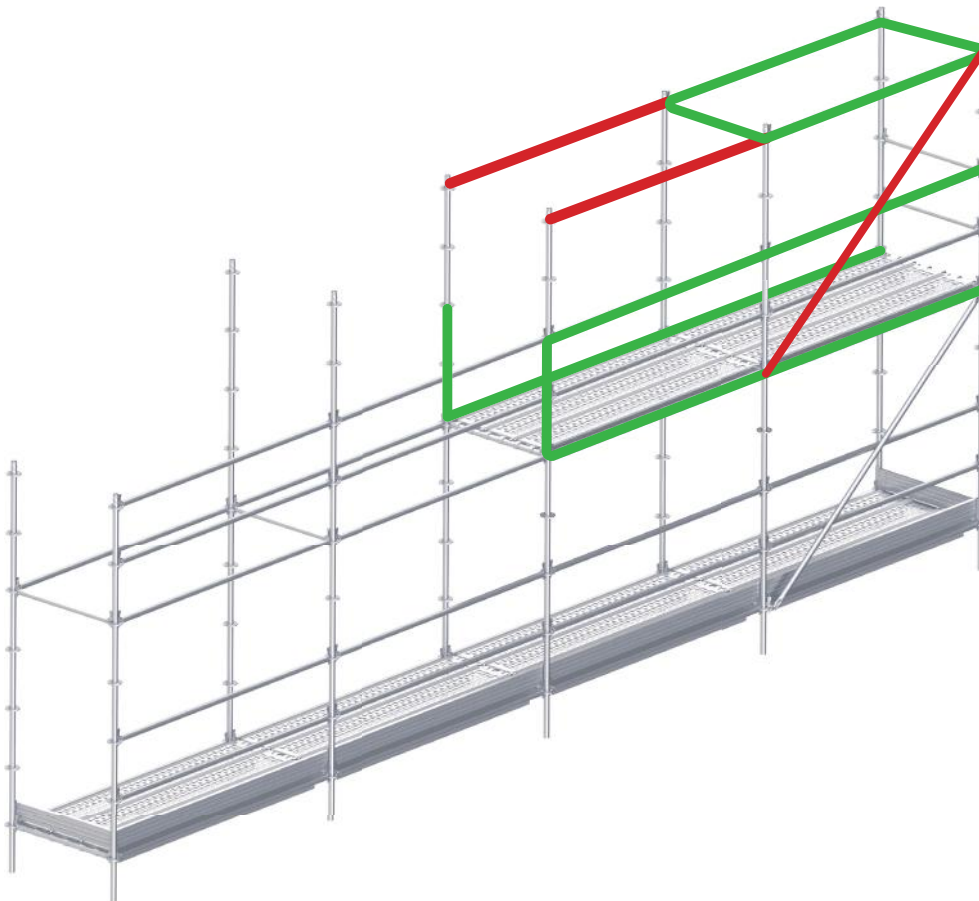
# RINGLOCK SAFETY MANUAL & USER GUIDES

## Connection to a Ledger—(Cont'd.)

- **Do not clip to:**
  - Ringlock Braces.
  - Standards not supported by two or more Ledgers attached to the same rosette.
  - Puncheons or cantilevered components.
  - Pipework, plant guardrails, cable racks etc.
- 8. Refer to “Safety Harness Connection Guide” for suitable/appropriate harness locations.
- 9. Anchor points should always be as high as possible. However, this is not always practical in scaffolding which is usually built from the ground up. Our recommendation is that where no higher anchor point is available you should clip to the Ledger immediately below your feet. There is sufficient space between the Ledger and the platform to clip on with a safety harness carabiner.

## WHERE TO ATTACH YOUR SHOCK ABSORBING LANYARD

Below represents where you can safely attach a Scaffold hook/snap hook. Connection locations shown in **Red** are not suitable for fixing to. The anchorage points shown in **Green** are to support Shock Absorbing Lanyard fall arrest equipment.



# RINGLOCK SAFETY MANUAL & USER GUIDES

## Additional Safety Guidelines—Scaffolding Operations

### SCAFFOLDING OPERATIONS

Please note that this guidance is offered to you as a minimum requirement for scaffolder's to work safely. If you work on a site with more stringent Company procedures (i.e. continuous attachment policy, inertial reels, etc.) then this will take precedence.

1. It is recommended that scaffolders wear safety harnesses and maintain 100% hook up all times when erecting dismantling or altering scaffolding. Working at height PPE should be worn as dictated by procedure and/or site requirements. Your fall arrest equipment should be thoroughly checked each shift before starting work. Report any suspected defects to your Company management.
2. Measures to prevent falls should always be considered before resorting to fall arrest equipment. Scaffolders should therefore install as a minimum, a single guardrail (O Ledger) to each lift at all locations in accordance with SG4 (latest edition). Advanced guardrail systems, scaffolder steps or other propriety equipment may be employed to erect the edge protection.
3. Additional methods may be employed including safety nets, inertia reel blocks, and horizontal line systems. These should be considered when planning your job and if necessary be included in your Risk Assessment. Specialist training or guidance will be required to use this proprietary equipment.
4. Scaffolders must erect the full width of the platform by using the appropriate number of Planks.
5. It is recommended the scaffolder clips to a suitable anchorage point and remain attached at all times when at risk of a fall (refer to "Safety Harness Attachment Guidelines" for suitable/appropriate harness locations.) This will include when:-
  - Working outside the protected area (i.e. decked platform and single guardrail.
  - Climbing up or down the structure.
  - Raising and lowering scaffolding components (e.g. 'handballing').
  - Fixing/dismantling scaffolding components.
  - Moving the working platform (e.g. when raising or lowering steel planks).
6. Ladders should be fitted as early as possible during erection and removed as late as possible during dismantling to eliminate the need to climb the scaffold structure. Refer to "Safety Guideline—Use of Ladders".
7. A suitable rescue procedure should be considered to be put in place to urgently retrieve an individual in the event of an arrested fall. This should be part of your Risk Assessment and understood by all involved before starting any job.
8. The erection of Ringlock system scaffolding is a skilled task and must only be carried out by trained personnel. By the very nature of the work, the hazards are severe and accidents frequently result in serious injuries or fatalities.

# RINGLOCK SAFETY MANUAL & USER GUIDES

## Scaffolding Operations—(Cont'd.)

9. Before commencing work, check that all necessary clearances or permits have been obtained and always check the Risk Assessment and sign to signify your understanding.
10. It is recommended that you check your scaffold tools each day before work, to ensure that all parts are in good condition, if you discover or suspect any defects, report them immediately to your Company management. Do not use faulty equipment.
11. Be aware, and make your workmates aware of any potential hazards near your place of work, i.e. noxious fumes, acids, electrical plant, overhead conductors, excessive heat, working machinery etc.
12. Obtain and use any required safety equipment, e.g. inertia reel blocks, running lines respirator, goggles, etc., and always wear a safety helmet, safety boots, overalls, gloves, eye protection and a safety harness.
13. Where there is a possibility of other persons passing through or near the work zone, ensure that suitable barriers or signs are erected to warn and exclude them from the danger area.
14. During scaffold erection, ensure that you and all other members of the scaffolding gang, do the following:
15. Use gin wheel and rope for raising and lowering scaffolding components, DO NOT throw scaffolding components up or down. (Refer to “Safety Guidelines – Gin Wheels and Ropes”.)
16. When at height ensure that at all times you take the necessary precautions to ensure a safe method of work and prevent a fall, (refer to item 2 above).
17. Erect advanced guardrails wherever possible and as soon as practicable.
18. Ensure that all members of the scaffolding gang have sufficient experience of erecting ‘Advanced’ or ‘Special’ structures. Do not take unnecessary risks.
19. Check all components are serviceable before use. Reject and report to your Company management any defective components.
20. Always ensure that the foundations or structure from which a scaffold is to be built are adequate:
  - Use Adjustable Base Jacks and timber sole boards under every standard. On soft ground or where there is any likelihood of surface penetration ensure an adequate base is provided for each standard.
  - If the scaffold is to be erected on a roof or over a basement or upper floor, check with the Client, that the foundation is suitable or if back propping or shoring is required.
  - Inform your Company management if excavations are taking place in the immediate vicinity of the scaffold base.

# RINGLOCK SAFETY MANUAL & USER GUIDES

## Scaffolding Operations—(Cont'd.)

- Ensure that the scaffold is erected with appropriate bay length and lift height to suit the specified loading. Safe Axial Loads are available for each possible lift height (refer to “Safe Load Capacities”. If the information is not received or if you are in any doubt, contact your Company management.
- Ensure that the scaffold is adequately tied to the building or structure in accordance with the tie patterns in this Technical Manual. During erection, fit ties progressively as soon as the specified height is reached. When dismantling each tie should be removed as late as possible and if necessary fit alternative means to maintain stability.
- Ensure that all guardrails and toeboards are fitted to all edges of platforms (including return ends) where a fall could occur, to comply with statutory regulations.
- Ensure that all incomplete structures are fitted with “DO NOT USE” or “SCAFFOLD INCOMPLETE” signs as soon as possible after erection and before dismantling has commenced.
- A system should be in place to communicate (such as a scaffolding tag procedure) whether the scaffold is safe for use, its duty rating/suitability i.e. access, general purpose or heavy duty
- Ensure that all spare scaffolding components are safely and securely stowed or returned to a rack or compound. No scaffold is ‘Complete’ until this task has been performed.
- Before dismantling is commenced, check that all ties are in position and that the scaffold is safe to access.
- Ensure that during dismantling operations a safe method of work is maintained and that a sequence of operations is adopted to ensure that the scaffold is stable and secure at each stage.
- Do not overload the scaffold with stored scaffolding components or other materials, when dismantling or re-erecting.



# RINGLOCK SAFETY MANUAL & USER GUIDES

## Additional Safety Guidelines—*Handling & Storage*

### HANDLING AND STORAGE OF RINGLOCK EQUIPMENT

1. Wear the appropriate type of gloves to protect your hands, whenever necessary. Take extra care when handling sharp-edged metal components.
2. Always pass scaffolding components by hand, or use a Gin Wheel and rope. Never bomb, throw or allow scaffolding components to fall.
3. Do not carry scaffold components up or down a ladder.
4. Ensure all your Ringlock components and equipment are neatly stored in relevant scaffolding stillage or scaffolding storage rack. Stack neatly to no more than five lifts high (local site/regional rules and regulations apply)
5. Ensure scaffolding stillage's and scaffolding storage rack are loaded to the approved Safe Working Load and not overloaded.
6. Scaffolding stillages or storage racks should be fork lifted or craned onto a flatbed truck for transport. Individual or loose items should be stacked into scaffolding stillages or storage racks and wrapped/ strapped prior to loading and transport
7. Where possible store all equipment in a dry and secure environment.
8. Visually inspect all scaffolding after use and arrival back into storage area. Refer to Technical Information and Maintenance Manual for inspection and quarantine of components.
9. Inspect scaffolding equipment at regular intervals not greater than 30 days to inspect for general wear and tear. All scaffold components should be checked prior to erection and use.
10. If stored in an outdoor environment be careful to ensure ground stability when stacking and moving Ringlock scaffolding components.

# RINGLOCK SAFETY MANUAL & USER GUIDES

## Additional Safety Guidelines—*Use of Ladders*

### USE OF LADDERS

Accidents involving ladders frequently occur within our industry and account for many serious injuries. Because the ladder is regarded as one of the most basic forms of access, the dangers are not always anticipated.

1. Inspect ladders each time before they are used and report defects to your management. Ensure they are straight with no obvious defects. Do not use defective ladders.
2. Set ladders on a firm and level base. Ensure, before climbing, that they are securely tied at the top and footed such that it cannot slip outwards or sideways. Ladder access points should be without obstructions, so that no one has to climb over a toeboard or under a guardrail.
3. Wherever possible use the “one in four rule” i.e. the ladder should slope one metre out at the base for every four metres of height.
4. Ensure that the ladder is long enough, i.e. it must project at least 1.0m (usually 5 rungs) above the landing place.
5. Ensure that the Ladder is fastened to Ringlock with an appropriate Ladder attachment coupler or 18mm polypropylene rope.
6. Work safely from ladders at all times. Use both hands to climb and do not overreach when working from a ladder, you must maintain 3 points of contact at all times.
7. Use a safety harness and lanyard connected to a suitable independent anchorage point, if you need to have your hands free for working. Refer to “Safety Harness Attachment Guidelines”.

# RINGLOCK SAFETY MANUAL & USER GUIDES

## Additional Safety Guidelines—*Gin Wheels and Ropes*

### GIN WHEELS AND ROPES

There are special instructions for dealing with Gin Wheels and ropes. Make sure you are familiar with the instructions provided by your Company before starting work.

1. Gin wheels and ropes used to lift and lower scaffolding components have to be properly examined and these records should be kept for future use. Gin Wheel registers, instructions for use and inspection and rope quality should be kept with the Gin wheel. Ensure the Safe Working Load is stamped to the Gin Wheel frame. Any rope and wheel **MUST** have current certification of inspection to ensure they are fit for purpose.
2. Remember the **MAXIMUM** recommended loading on a rope and wheel should be restricted to 25kg for a one man lift, but should definitely not exceed the Safe Working Load of a Fittings Bag. Loads to be lifted should wherever possible be broken down into manageable weights which can be easily handled by one person.
3. Ringlock system Davit arms should be used where necessary. Gin Wheel rings must be connected to the Davit arm with a 'D' shackle with a minimum Safe Working Load of 30kN minimum.
4. Ropes used on Gin Wheels must be of the correct size (usually 18mm diameter polypropylene rope).
5. All loads must be properly secured using the correct knots, lifting containers, bags or nets. Test by raising the load slightly from the ground or platform and make certain that it is secure before raising or lowering further.
6. Erect signs to indicate that hoisting activities are taking place around the safe area. Before any lifting or lowering operations commence, the work area **MUST** be cordoned off to prevent the access of unauthorised personnel.
7. **ALWAYS** keep yourself clear when hoisting scaffolding components. Never stand directly under the load.
8. Faults to look for in a Gin Wheel
  - No certification
  - No Safe Working Load stamped on the wheel
  - Split pin missing
  - Dents in the main body which will prevent smooth operation of the rope
  - Only ring type gin wheels are permitted
9. Faults to look for in a Rope
  - No certification
  - Rope is sleeved with an identification tag at each end.
  - At least one of these tags is an original identification label.
  - Abrasions, flaws, wear, thinning or rotting.
  - Usually only 18mm polypropylene rope is permitted.



# **RINGLOCK** **SAFETY MANUAL & USER GUIDES**

## **Disclaimer**

### **DISCLAIMER**

Whilst AT-PAC and its suppliers have taken every reasonable effort to ensure the information contained within this publication is correct and complete at the time of printing, you should be aware that there will be periodical changes and AT-PAC does not accept any liability for any inconvenience, loss or damage caused as a result of any inaccuracy or omission within this publication.

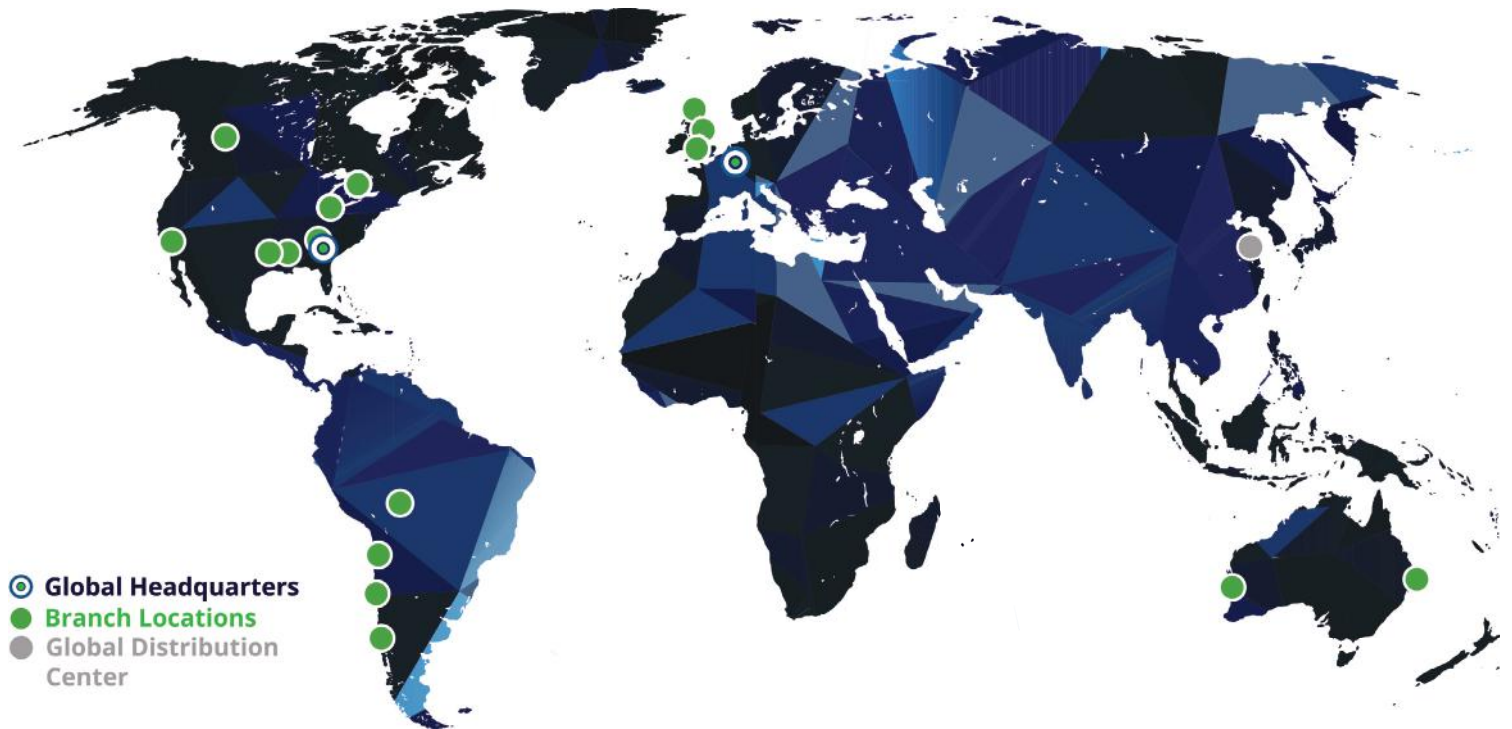
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# ATPAC

COMPLETE SCAFFOLDING SOLUTIONS



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