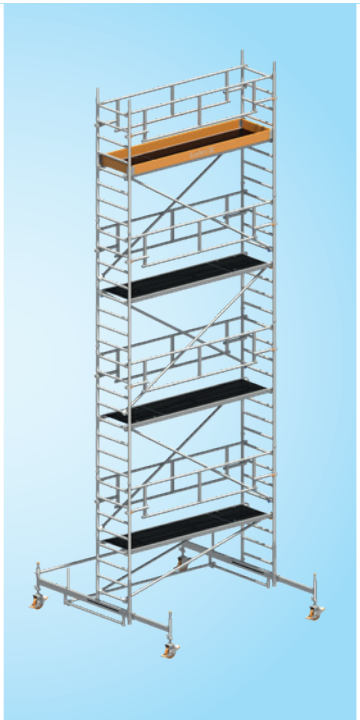
Layher®

More Possibilities. The Scaffolding System.

LAYHER UNI STANDARD
INSTRUCTIONS FOR ASSEMBLY AND USE

SAFETY ASSEMBLY P2,
SAFETY ASSEMBLY P2 WITH UNI TELESCOPING GUARDRAIL
AND SAFETY ASSEMBLY P2 SAFETY[PLUS]

DIN EN 1004-2-DE



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Mobile Working Platforms
According to DIN EN 1004-1:2021
working platform 0.75 x 2.85 m

max. working height:
indoors 13.60 m
outdoors 9.60 m

perm. load capacity: 2.0 kN / m^2
on max. one working level
(Load class 3 according to
DIN EN 1004- 1: 2021)

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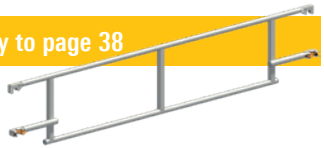


NOTE

The products or assembly variants shown in these Instructions for Assembly and Use (DIN EN 1004-2) may be subject to country-specific regulations. Subject to local regulations, we reserve the right not to supply all of the products illustrated here.

Beyond the currently valid General Terms of Sale of Wilhelm Layher GmbH & Co KG, **no liability** is assumed for damage of whatever nature that has been incurred due to the following reasons:

- Non-compliance with instructions
- Improper assembly, and use of the product not for its intended purpose
- Use of non-original and damaged Layher components
- Unauthorised structural changes
- Improperly performed repairs, above all when non-original Layher spare parts are used
- Events caused by force majeure (disasters, foreign objects)

The respective user shall ensure on their own responsibility that the points as stated and also the current safety regulations are complied with and that use for the intended purpose is assured.

These Instructions for Assembly and Use must:

- be available at the place of use of the Mobile Working Platform.
- be fully implemented during the assembly, modification and dismantling of the Mobile Working Platform, including all specifications they contain. No modifications to them are permitted, o are permissible only after consultation with the manufacturer.

These instructions cannot cover all the possible applications. If you have any questions about specific applications, please contact your local Layher partner. They will be happy to provide advice and answers on products, their use or specific assembly regulations.

EXPLANATION OF SYMBOLS

Additional information and notes on the assembly, modification, dismantling and use of Mobile Working Platforms and situations in which it is necessary to consult with the manufacturer are indicated by the symbol opposite.

When assembling, modifying, dismantling or using Mobile Working Platforms, failure to observe the present Instructions for Assembly and Use and the applicable work safety regulations may result in a variety of hazards and/or require increased attention on the part of the user. Situations in which such hazards may arise and/or in which users must be required to pay increased attention are indicated by the symbol opposite.

When assembling, modifying, dismantling or using Mobile Working Platforms, failure to observe the present Instructions for Assembly and Use and the applicable work safety regulations may result in risks due to electrical voltages. Situations in which risks due to electrical voltages may arise are indicated by the symbol opposite.

When assembling, modifying, dismantling or using Mobile Working Platforms, failure to observe the present Instructions for Assembly and Use and the applicable work safety regulations may result in a risk of falls. Situations in which a risk of falls may arise are indicated by the symbol opposite.

1. INTRODUCTION

General

These instructions for assembly and use relate to the assembly, modification and dismantling of the **Uni Standard** Mobile Working Platform with Safety Assembly P2, Safety assembly P2 with Uni Telescoping Guardrail and Safety Assembly P2 SAFETY^{PLUS} made by Wilhelm Layher GmbH & Co. KG of Güglingen-Eibensbach, Germany.

Number of persons required for assembly, modification and dismantling: ▸ 2 persons

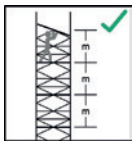
Caution: Layher Uni Standard may only be assembled, modified and dismantled under the supervision of a person who has been qualified, trained and authorised for operations involving "Mobile Working Platforms".

2. GENERAL DIRECTIONS FOR ASSEMBLY AND USE

The Mobile Working Platform may be used for the specified load class in accordance with the stipulations of DIN EN 1004 and taking into account the appropriate sections of the German Ordinance on Industrial Safety and Health (BetrSichV).

The user of the Mobile Working Platform must comply with the following instructions:

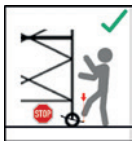
- The user must verify the suitability of the selected Mobile Working Platform for the work to be performed (Section 4 of BetrSichV).
- The maximum platform height for Mobile Working Platforms in accordance with DIN EN 1004 is
  - inside buildings: 12.00 m
  - outside buildings: 8.00 m
- Assembly, modification or dismantling of the Mobile Working Platform in accordance with the present Instructions for Assembly and Use may only be performed under the supervision of a qualified person or by professionally suitable employees after special instruction. Only the models shown in these Instructions for Assembly and Use may be built and also used. The Mobile Working Platform must be inspected before, after or during assembly, but no later than before it is put into service (Section 14 of BetrSichV). During assembly, modification or dismantling, the Mobile Working Platform must be marked with a prohibition sign indicating "no entry" (BetrSichV Annex 1, Para. 3).
- It must first be checked that all parts, auxiliary tools and safety equipment for assembling the Mobile Working Platform are available at the site.
- All ladder frame joints must always be secured using spring clips.
- The access hatches must be kept shut whenever they are not in use.
- Mobile Working Platforms are not designed to be covered. Mobile Working Platforms are not designed to be used as side protection.
- If stipulated, the base must be widened by means, for example, of mobile beams or stabilisers or outriggers and ballast must be installed.
- Stability **must be ensured during every phase** of assembly and dismantling as well as when the platform is moved. **The necessary ballast weights and/or wall supports** (see corresponding sections in these Instructions for Assembly and Use) **must generally be attached before any risk of falling arises.**
- The adjustable mobile beams may only be inserted in conformity with the Instructions for Assembly and Use. Any ballasting that is required must be installed prior to adjustment, in accordance with the ballast specifications in the section on "Tower models".
- To assemble the upper platforms, the individual parts must be passed up from one level to the next. Small quantities of tools and materials can be carried up by the personnel, or failing that hoisted to the working level using transport ropes.
- In the case of intermediate platforms used solely for ascent, toe boards can be dispensed with.
- Working on two or more working levels at the same time is not permitted. In the event of exceptions, the manufacturer must be consulted. When work is being done on several levels, they must be completely fitted with three-part side protection.
- Horizontal and vertical loads that can cause the Mobile Working Platform to topple over should be avoided, for example:
  - due to pushing against the side protection **(max. 30 kg).**
  - due to additional wind loads (tunnel effect of through-type buildings, unclad buildings and corners).
- Before installation, all parts must be inspected to ensure they are in flawless condition. Only undamaged original parts of the Mobile Working Platforms from Layher may be used. Components such as snap-on claws and spigots must be cleaned of dirt after use. Components must be secured against slipping and impacts when transported by truck. Components must be handled in such a way that they are not damaged.
- The Mobile Working Platforms must not be subjected to any aggressive fluids or gases.
- Couplers in the structures must be tightened to 50 Nm.



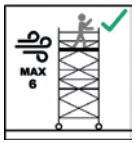
The maximum distance between the platforms must not exceed 2.25 m. Exception: The distance between the assembly level (the ground) and the first platform. The maximum distance permitted here is 3.40 m.

Mobile Working Platforms must be set to the perpendicular using the adjusting spindles or by inserting suitable materials underneath them. The maximum permitted tilt is 1 % (in horizontal direction = scaffolding length / 100).

Movement is only permitted on sufficiently firm ground with a max. inclination of 4 % (approx. 2.5°), in the longitudinal direction or perpendicular to this, and the speed must not exceed normal walking pace (4 km/h). All impacts must be avoided.

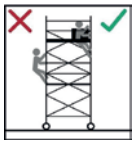


After movement, the wheels must be locked by pressing down the brake lever.

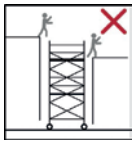


When used in the open air or in open buildings, **any work on the Mobile Working Platform must be stopped immediately if the wind strength exceeds 6 on the Beaufort scale.** At these wind speeds or at the end of a shift, Mobile Working Platforms must be moved to a location where they are protected from the wind or suitable measures must be taken to secure them against toppling over.

A wind strength of more than 6 can be recognised by noticeable difficulty in walking. If possible, Mobile Working Platforms used outside buildings must be securely fastened to the building itself or to another structure. It is recommended that Mobile Working Platforms be anchored if they are left unattended.



Upward access to Mobile Working Platforms is permitted only on the inside of the scaffolding structure. External access is not permitted.

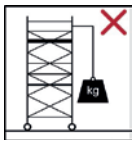


It is not permitted to climb onto and across different Mobile Working Platforms, to climb onto Mobile Working Platforms from other objects or structures, or to jump onto deck surfaces.

Due to the maximum load-bearing capacity of the structure, there may be a limit to the number of persons who may be present on a working level at any given time. This maximum load on the working level due to persons, tools and material must be checked in advance and be limited if necessary.

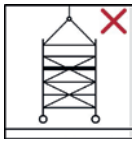
Failure to respect the maximum load limit can overload the structure and/or cause it to collapse. Serious or fatal injuries are possible.

It is not permitted to increase the platform height by using ladders, boxes or other mechanisms.



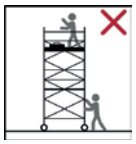
It is not permitted to lift heavy objects by attaching and using lifting gear at Mobile Working Platforms.

It is not permitted to lift Mobile Working Platforms using mechanical equipment.



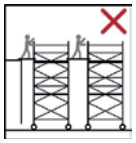
In the standard version, Mobile Working Platforms are not designed to be lifted or suspended.

In certain cases, and following consultation with the manufacturer, it may be possible to reinforce the structure by replacing the appropriate components.



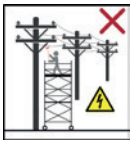
It is not permitted to move the Mobile Working Platform when persons and/or loose objects are present on it.

It is not permissible to stand and move around on unsecured levels/platforms of Mobile Working Platforms.



In the standard version, it is not permitted to establish bridges between different Mobile Working Platforms or between them and other objects or structures.

In certain cases, and following consultation with the manufacturer, it may be possible to reinforce the structure by replacing corresponding components (special construction form) in conjunction with a special verification of stability or a structural strength calculation.



When working with Mobile Working Platforms at or in the vicinity of electrical equipment and overhead cables, it is necessary to respect the following additional instructions.

It is only permissible to assemble and use Mobile Working Platforms if:

- the system has been deactivated.
- the deactivated equipment has been secured against being switched back on.
- the system has been checked for the absence of voltage.
- adjacent live parts have been secured by means of protective devices.
- n the case of work performed in the vicinity of overhead electrical cables, an adequate safety distance as specified in VDE 0105-100 can be / is respected.

3.1 ROLLING TOWERS WITH SAFETY ASSEMBLY P2

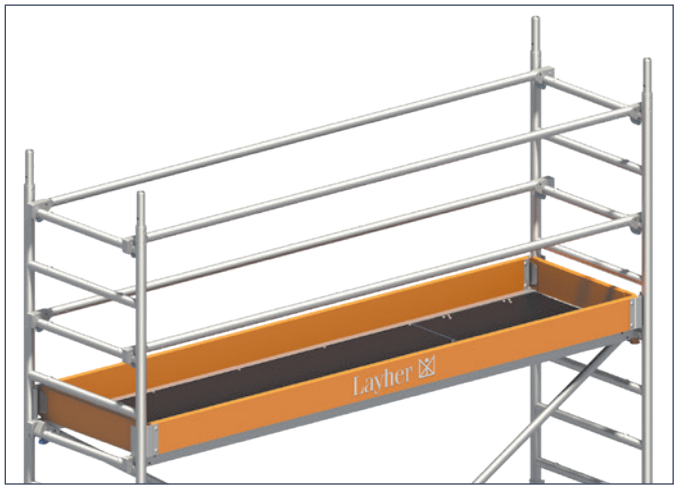
3.1.1 MEASURES FOR FALL PROTECTION

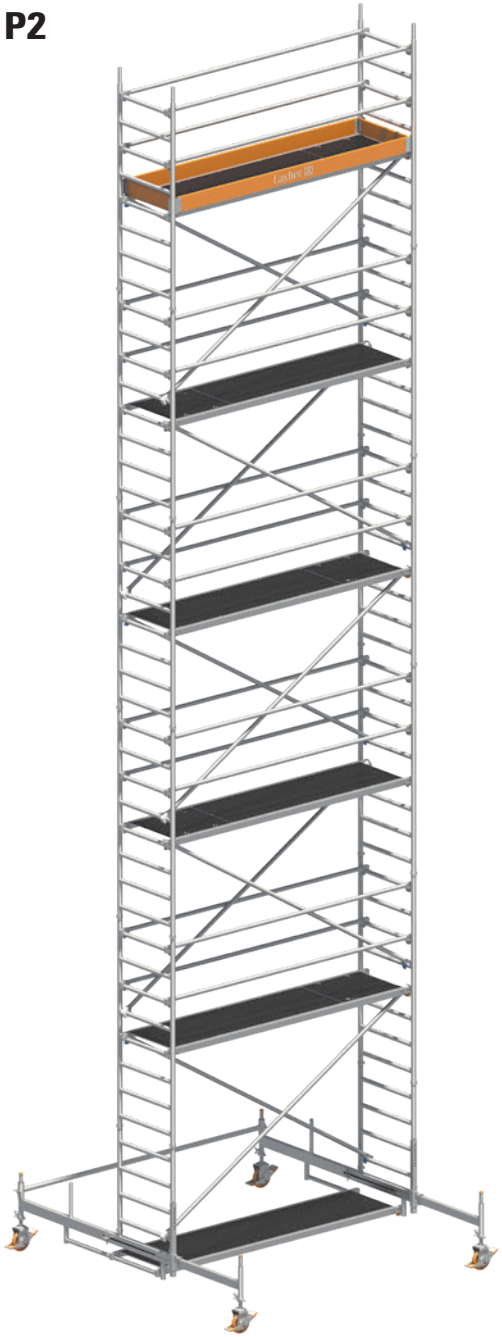
Suitable measures for fall protection must be taken during assembly, modification or dismantling of the scaffolding structure. Safety Assembly P2 implements these protective measures in full.

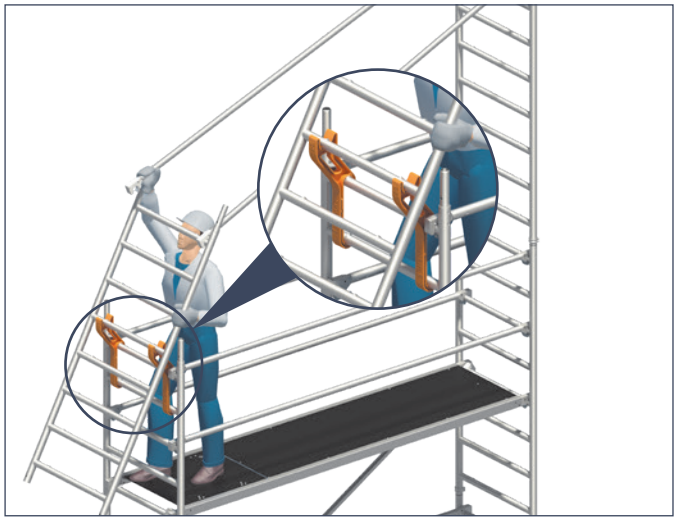
Safety Assembly P2

- Platforms with vertical spacing of 2 m.
- Safer design with integrated and collective side protection.

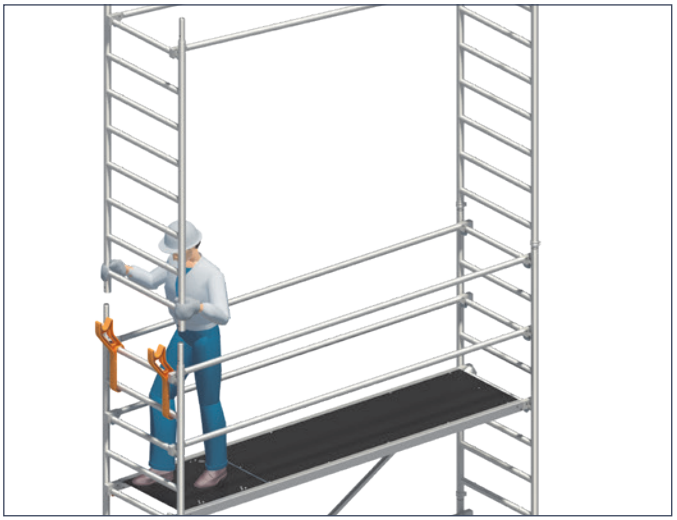
Thanks to the platforms, which are assembled 2 m apart, the handrails can already be fitted from the level underneath and intermediate rails can be fitted from the secured area of the access hatch, so that when the next platform up is accessed there is already a two-part side protection in place on all sides.



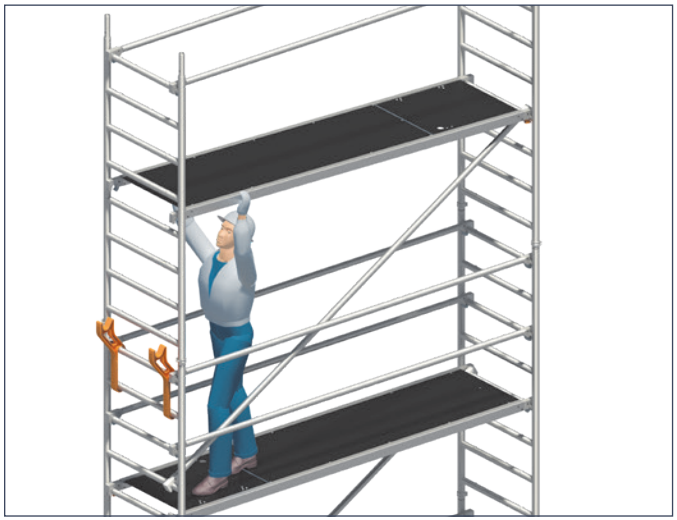




1. Attach the first ladder frame. Attach the Uni assembly hooks and position the second ladder frame in order to fit the guardrails.



2. Swivel the ladder frame with guardrail upwards and fit it in place.



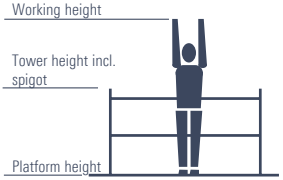
3. Insert diagonal braces and access deck.

4. Assemble the intermediate rails from a secured position in the area of the access hatch.

3.1.2 TOWER MODELS

1401101 – 1401111

For **assembly outdoors** comply with the height restriction!

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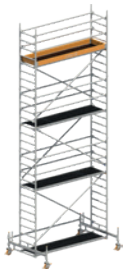
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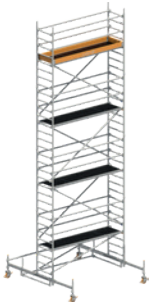
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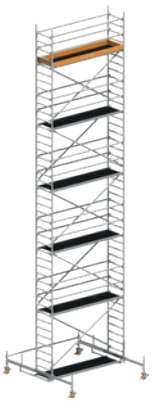
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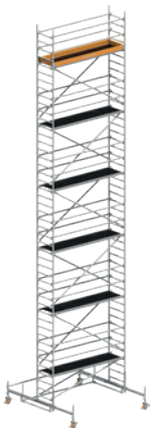
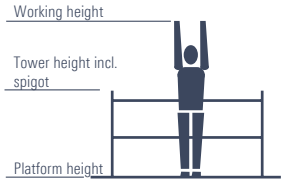

1401111

Tower model	1401101	1401102	1401103	1401104	1401105	1401106	1401107	1401108	1401109	1401110	1401111
Working height [m]	3.20	4.35	5.35	6.35	7.35	8.35	9.38	10.38	11.38	12.38	13.38
Tower height [m]	2.43	3.58	4.58	5.58	6.58	7.58	8.61	9.61	10.61	11.61	12.61
Platform height [m]	1.20	2.35	3.35	4.35	5.35	6.35	7.38	8.38	9.38	10.38	11.38
Weight [kg] (without ballast)	96.4	180.2	215.1	242.0	276.9	303.8	389.9	418.0	452.9	479.8	514.7
Ballasting (stated in units)											
Indoors											
Assembly in the centre*	l2 r2	0	0	0	0	0	0	0	0	0	0
Assembly off-centre	X	0	0	L0 R4	L0 R4	L0 R6	L0 R4	L0 R6	L0 R6	L0 R8	L0 R10
Assembly off-centre with wall bracing	X	0	0	0	0	0	0	0	0	0	0
Assembly in the centre with 1 bracket*	X	0	0	L0 R2	L0 R4	L0 R6	0	0	0	0	0
Assembly in the centre with 2 brackets*	X	0	0	0	0	0	0	0	0	0	0
Outdoors											
Assembly in the centre*	l2 r2	0	l1 r1	l5 r5	l9 r9	l15 r15	l2 r2	X	X	X	X
Assembly off-centre	X	L0 R2	L0 R6	L0 R10	L4 R16	L10 R22	L0 R18	X	X	X	X
Assembly off-centre with wall bracing	X	0	0	0	L4 R0	L10 R0	0	X	X	X	X
Assembly in the centre with 1 bracket*	X	L0 R4	L0 R8	L2 R12	L6 R16	L12 R22	X	X	X	X	X
Assembly in the centre with 2 brackets*	X	l2 r2	l5 r5	l8 r8	X	X	X	X	X	X	X

* For assembly with adjustable mobile beam, the latter must be fully extended. X = not permissible / not possible 0 = no ballast required For ballasting, use Layher ballast weights, Ref. No. 1249.000, of 10 kg each.
Fasten the weights quickly and securely at the right place using the coupler handwheel. All heights stated without possible spindle extension! The max. spindle extension of the relevant assembly variants can be found in the corresponding section! **Do not use any liquid or granular ballast substances. The ballast weights must be distributed evenly to all ballasting fixing points.**
Example: l2, r2 → Fasten 2 ballast weights of 10 kg each to the ladder frame on its left-hand side, and 2 ballast weights of 10 kg each on its right-hand side.
L6, R16 → Fasten 6 ballast weights of 10 kg each to the mobile beam on its left-hand side, and 16 ballast weights of 10 kg each on its right-hand side
r and R relate in the case of off-centre assembly always to the side facing away from the tower; l and L relate to the side facing the tower.

1401122 – 1401131
with stabilisers, extendable

For **assembly outdoors** comply with the height restriction!

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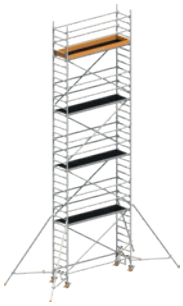
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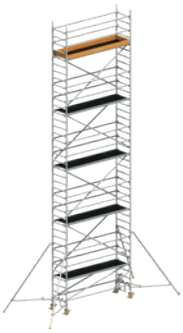
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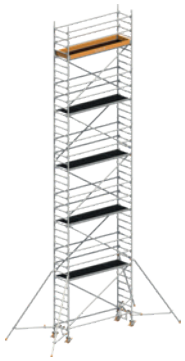
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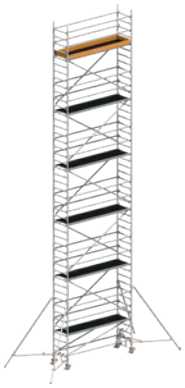

1401131

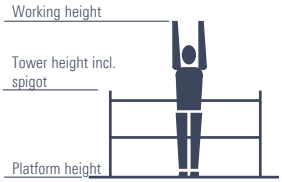
Tower model	1401122	1401123	1401124	1401125	1401126	1401127	1401128	1401129	1401130	1401131
Working height [m]	4.20	5.20	6.20	7.20	8.20	9.20	10.20	11.20	12.20	13.20
Tower height [m]	3.43	4.43	5.43	6.43	7.43	8.43	9.43	10.43	11.43	12.43
Platform height [m]	2.20	3.20	4.20	5.20	6.20	7.20	8.20	9.20	10.20	11.20
Weight [kg] (without ballast)	169.3	220.6	232.1	283.4	293.9	345.2	355.7	407.0	417.5	467.8
Ballasting (stated in units)										
Indoors										
Assembly in the centre	0	0	0	0	0	0	0	0	0	0
Assembly off-centre	L0 R2	L0 R4	L0 R6	L0 R8	L0 12R	L0 R12	L0 R16	L0 R18	L0 R20	L0 R22
Assembly off-centre with wall bracing	0	0	0	0	0	0	0	0	0	0
Outdoors										
Assembly in the centre	0	0	0	0	0	0	X	X	X	X
Assembly off-centre	L0 R8	L0 R10	L0 R16	L0 R20	L0 R28	L0 R34	X	X	X	X
Assembly off-centre with wall bracing	0	0	0	0	0	0	X	X	X	X

X = not permissible / not possible 0 = no ballast required For ballasting, use Layher ballast weights, Ref. No. 1249.000, of 10 kg each. Fasten the weights quickly and securely at the right place using the coupler handwheel. All heights stated without possible spindle extension! The max. spindle extension of the relevant assembly variants can be found in the corresponding section! **Do not use any liquid or granular ballast substances. The ballast weights must be distributed evenly to all ballasting fixing points.**

Example: l2, r2 → Fasten 2 ballast weights of 10 kg each to the ladder frame on its left-hand side, and 2 ballast weights of 10 kg each on its right-hand side.
L6, R16 → Fasten 6 ballast weights of 10 kg each to the mobile beam on its left-hand side, and 16 ballast weights of 10 kg each on its right-hand side
r and R relate in the case of off-centre assembly always to the side facing away from the tower; l and L relate to the side facing the tower.

1401145 – 1401151
with stabilisers, 5 m

For **assembly outdoors** comply with the height restriction!

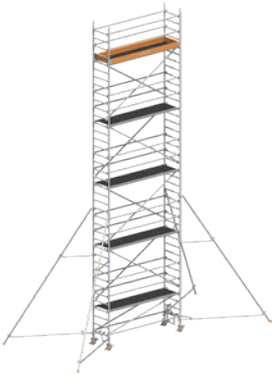


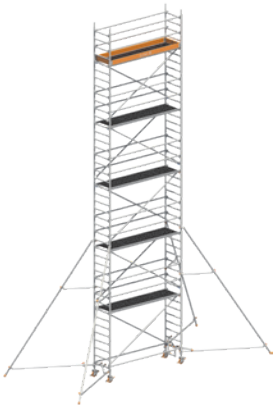

1401145

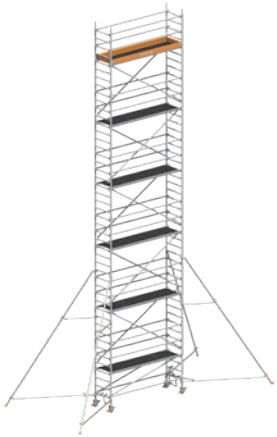

1401146


1401147


1401148


1401149


1401150


1401151

Tower model	1401145	1401146	1401147	1401148	1401149	1401150	1401151
Working height [m]	7.20	8.20	9.20	10.20	11.20	12.20	13.20
Tower height [m]	6.43	7.43	8.43	9.43	10.43	11.43	12.43
Platform height [m]	5.20	6.20	7.20	8.20	9.20	10.20	11.20
Weight [kg] (without ballast)	309.0	319.5	370.8	381.3	432.6	443.1	494.4
Ballasting (stated in units)							
Indoors							
Assembly in the centre	0	0	0	0	0	0	0
Assembly off-centre	L0 R6	L0 R8	L0 R8	L0 R10	L0 R12	L0 R14	L0 R14
Assembly off-centre with wall bracing	0	0	0	0	0	0	0
Outdoors							
Assembly in the centre	0	0	0	X	X	X	X
Assembly off-centre	L0 R16	L0 R20	X	X	X	X	X
Assembly off-centre with wall bracing	0	0	0	X	X	X	X

X = not permissible / not possible 0 = no ballast required For ballasting, use Layher ballast weights, Ref. No. 1249.000, of 10 kg each. Fasten the weights quickly and securely at the right place using the coupler handwheel. All heights stated without possible spindle extension! The max. spindle extension of the relevant assembly variants can be found in the corresponding section! **Do not use any liquid or granular ballast substances. The ballast weights must be distributed evenly to all ballasting fixing points.**

Example: l2, r2 → Fasten 2 ballast weights of 10 kg each to the ladder frame on its left-hand side, and 2 ballast weights of 10 kg each on its right-hand side.
L6, R16 → Fasten 6 ballast weights of 10 kg each to the mobile beam on its left-hand side, and 16 ballast weights of 10 kg each on its right-hand side
r and R relate in the case of off-centre assembly always to the side facing away from the tower; l and L relate to the side facing the tower.

3.1.3 PARTS LIST

Safety assembly P2,
Tower models 1401101 – 1401111

Tower model	Ref. No.	1401101	1401102	1401103	1401104	1401105	1401106	1401107	1401108	1401109	1401110	1401111
Guardrail 2.85 m	1205.285	0	4	9	8	13	12	17	16	21	20	25
Double guardrail 2.85 m	1206.285	2	0	0	0	0	0	0	0	0	0	0
Diagonal brace 3.35 m	1208.285	0	2	2	4	4	6	6	8	8	10	10
Diagonal brace 2.95 m	1208.295	0	0	2	0	2	0	2	0	2	0	2
Basic tube 2.85 m	1211.285	0	1	1	1	1	1	1	1	1	1	1
Deck 2.85 m	1241.285	0	1	0	1	0	1	0	1	0	1	0
Access deck 2.85 m	1242.285	1	1	2	2	3	3	4	4	5	5	6
Spring clip	1250.000	0	8	8	12	12	16	16	20	20	24	24
Ladder frame 75/4 - 1.00 m	1297.004	0	2	0	2	0	2	0	2	0	2	0
Ladder frame 75/8 - 2.00 m	1297.008	2	2	4	4	6	6	8	8	10	10	12
Uni assembly hook	1300.010	0	1	1	1	1	1	1	1	1	1	1
Mobile beam 1.80 m with access ledger	1323.180	0	2	2	2	2	2	0	0	0	0	0
Mobile beam 3.20 m with access ledger, adjustable	1323.320	0	0	0	0	0	0	2	2	2	2	2
Wheel 700 - 7 kN	1359.200	4	4	4	4	4	4	4	4	4	4	4
End toe board 0.75 m	1438.075	2	2	2	2	2	2	2	2	2	2	2
Toe board 2.85 m with claw	1439.285	2	2	2	2	2	2	2	2	2	2	2
Ballast	1249.000	For number of ballast weights see Section 3.1.2: Tower models										

Safety Assembly P2 with stabiliser, extendable and stabiliser 5 m
Tower models 1401122 – 1401131 and 1401145 – 1401151

Tower model	Ref. No.	1401122	1401123	1401124	1401125	1401126	1401127	1401128	1401129	1401130	1401131	1401145	1401146	1401147	1401148	1401149	1401150	1401151
Guardrail 2.85 m	1205.285	6	10	10	14	14	18	18	22	22	26	14	14	18	18	22	22	26
Diagonal brace 3.35 m	1208.285	2	2	4	4	6	6	8	8	10	10	4	6	6	8	8	10	10
Diagonal brace 2.95 m	1208.295	0	2	0	2	0	2	0	2	0	2	2	0	2	0	2	0	2
Access deck 2.85 m	1242.285	1	2	2	3	3	4	4	5	5	6	3	3	4	4	5	5	6
Telescoping stabiliser - 2.60 m	1248.260	4	4	4	4	4	4	4	4	4	4	0	0	0	0	0	0	0
Rotation lock for stabiliser	1248.261	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Stabiliser 5 m	1248.500	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4
Spring clip	1250.000	4	4	8	8	12	12	16	16	20	20	8	12	12	16	16	20	20
Ladder frame 75/4 - 1.00 m	1297.004	2	0	2	0	2	0	2	0	2	0	0	2	0	2	0	2	0
Ladder frame 75/8 - 2.00 m	1297.008	2	4	4	6	6	8	8	10	10	12	6	6	8	8	10	10	12
Uni assembly hook	1300.010	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Access ledger 0.30 m	1344.002	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Wheel 700	1359.200	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
End toe board 0.75 m	1438.075	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Toe board 2.85 m with claw	1439.285	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Ballast	1249.000	For number of ballast weights see Section 3.1.2: Tower models																

Extra requirements for assembly with bracket deck surfaces

Tower model	Ref. No.	1 bracket deck surface	2 bracket deck surfaces
Guardrail 2.85 m	1205.285	2	2
Deck 2.85 m	1241.285	1	2
Spring clip	1250.000	4	8
Ladder frame 75 / 4	1297.004	2	4
Intermediate deck	1339.285	1	2
Aluminium bracket 0.75 m	1341.075	2	4
End toe board 0.75 m	1438.075	2	4

The tower models, that may be widened using **bracket deck surfaces**, can be found on pages 56 – 59 (ballasting). When using brackets, the tower may only be loaded with 1.5 kN / m² (load class 2) at one working level only. A maximum of two bracket deck surfaces may be assembled. When bracket deck surfaces are fitted, the spindles must not be extended. The respective working level must be equipped with complete side protection.

3.1.4 ASSEMBLY SEQUENCE SAFETY ASSEMBLY P2

Observe the general directions for assembly and use on pages 5 – 7. The assembly examples shown are intended for use up to a maximum platform height of 12 m indoors and up to a maximum platform height of 8 m outdoors. Snap the snap-on claws of all parts into the ladder frames from above. Level the scaffolding structure after basic assembly. This is done using the threaded spindles of the wheels.

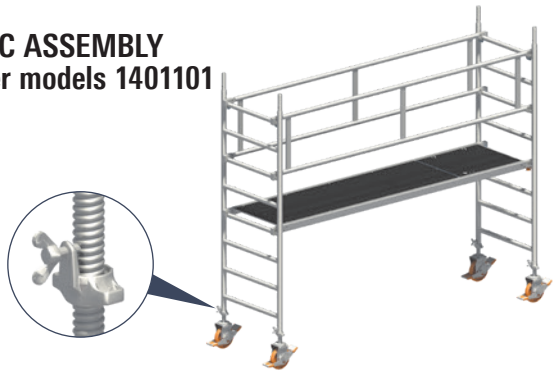
The wheels must be locked during assembly, modification or dismantling and while there is anybody on the tower.

Hammer home the wedges in the system until the blow bounces off. Always tighten the screw couplers well (50 Nm).

At the top level, a double guardrail **18** or a tower beam **21** can be fitted instead of two single guardrails **17**. Please remember in this case that two additional guardrails **17** must be provided for assembly and dismantling for an entire level in order to ensure collective side protection in keeping with the assembly variant used. They can be removed again after insertion of the double guardrail **18** or the tower beam **21**.

The **item numbers** for the components relate to the component list on pages 63 – 67.

BASIC ASSEMBLY
Tower models 1401101

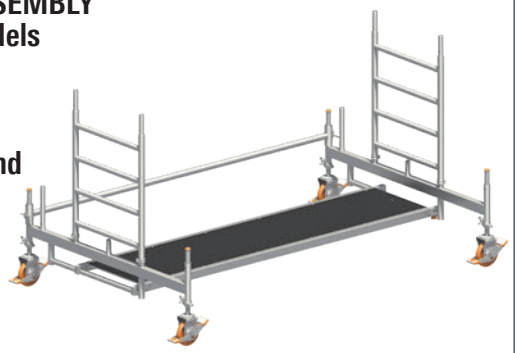


1. Insert the wheels **1** into the ladder frames 75/8 **15** and secure them against falling out by tightening the wing screws on the spindle nuts.

2. Connect the two ladder frames 75/8 **15** to two double guardrails **18**. Hook the access deck **27** into the fourth rung from the bottom of the ladder frames 75/8 **15**.

Further assembly is performed as per page 19 “Completing the working platform”.

BASIC ASSEMBLY
Tower models 1401102, 1401104, 1401106, 1401108 and 1401110



1. Insert the wheels **1** into the mobile beams **6 / 7** and secure them against falling out by tightening the wing screws on the spindle nuts.

2. Connect the mobile beams **6 / 7** to a basic tube **9** – or optionally to a basic strut **10** – and to a deck **28**.

3. Fit two ladder frames 75/4 **14** onto the mobile beams and secure them using spring clips **16**.

Further assembly is performed as per page 18, "Assembly of intermediate platforms".

BASIC ASSEMBLY
Tower models 1401103, 1401105, 1401107, 1401109 and 1401111

1. Insert the wheels **1** into the mobile beams **6/7** and secure them against falling out by tightening the wing screws on the spindle nuts.

2. Connect the mobile beams **6/7** to one another with a basic tube **9** – or optionally with a basic strut **10** – and a guardrail **17** on the access ledger of the mobile beam.

3. Fit a ladder frame 75/8 **15** onto the mobile beam **6/7** and secure it using spring clips **16**. Hook two guardrails **17** over the top rung and connect them to a second ladder frame 75/8 **15**. Then fit the second ladder frame 75/8 **15** onto the mobile beam and secure it using spring clips **16**.

   Any double guardrails that might be in stock must be installed as side protection for the first level. The guardrails previously installed as advancing side protection are removed again after fitting of the double guardrails.

4. Fit two diagonal braces **23** and an access deck **27**. **Ensure that the two diagonal braces are installed parallel to one another in the direction of the access hatch.**

5. Before going up, fit two additional guardrails **17** as intermediate rails to the second rung above the standing surface, starting from the assembly surface (ground).

Further assembly is performed as per page 18, "Assembly of intermediate platforms".

BASIC ASSEMBLY
Tower models 1401124, 1401126, 1401128, 1401130, 1401146, 1401148 and 1401150

1. Insert the wheels **1** into the ladder frames 75/4 **14** and secure them against falling out by tightening the wing screws on the spindle nuts.

2. Fit further ladder frames 75/8 **15**. Connect the two rolling tower side parts at the top rungs and at the bottom rungs with two guardrails **17** in each case.

3. Fit two diagonal braces **22** crosswise. Then hook in an access deck **27**. Assemble two guardrails **17** at the bottom rung of the ladder frame 75/4 **14**.

4. To maintain the maximum distance from the first rung, fit an access ledger **11** on the ascent side of the rolling tower.

5. Climb up on the inside using the rungs of the ladder frame and through the access hatch provided. While sitting in the access hatch opening, protected from falling by the sides of the access deck **27**, assemble the intermediate rail of the next level: to do so, fit the guardrails **17** to the second rungs above the standing surface (see also Assembly of intermediate platforms, item 5).

Further assembly is performed as per page 18, “Assembly of intermediate platforms”.

BASIC ASSEMBLY
Tower models 1401125, 1401127, 1401129, 1401131, 1401145, 1401147, 1401149 and 1401151

1. Insert the wheels **1** into the ladder frames 75/8 **15** and secure them against falling out by tightening the wing screws on the spindle nuts.

2. Connect the two rolling tower side parts at the top rungs and at the bottom rungs with two guardrails **17** in each case.

3. Fit two diagonal braces **23** and an access deck **27**. Ensure that the two diagonal braces **22** are installed parallel to one another in the direction of the access hatch.

4. To maintain the maximum distance from the first rung, fit an access ledger **11** on the ascent side of the rolling tower.

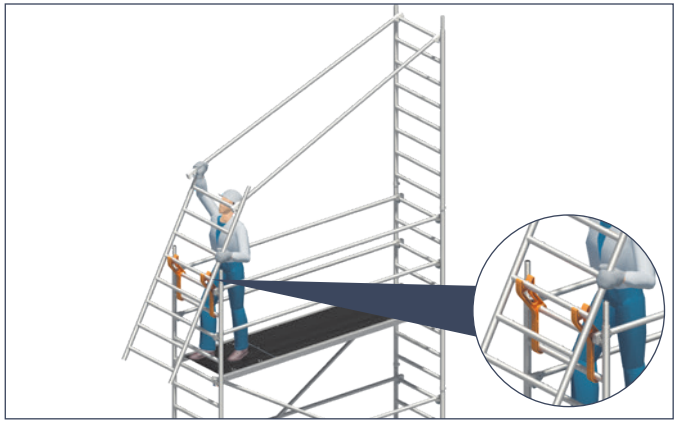
5. Before going up, fit two additional guardrails **17** as intermediate rails to the second rung above the standing surface, starting from the assembly surface (ground).

Further assembly is performed as per page 18, “Assembly of intermediate platforms”.

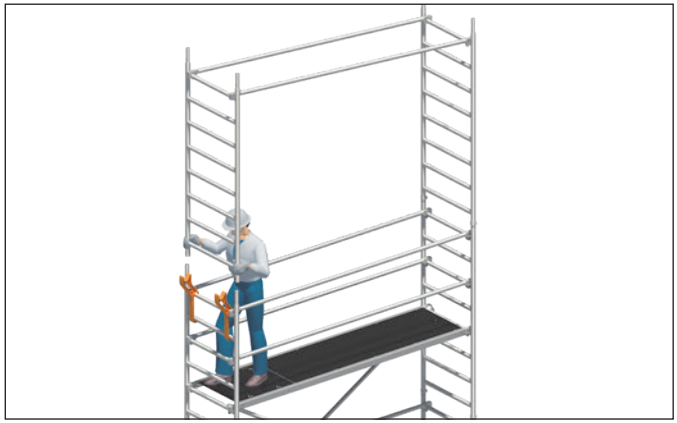
ASSEMBLY OF INTERMEDIATE PLATFORMS
All tower models with Safety Assembly P2

Repeat the following assembly steps 1 to 5 several times depending on the assembly height.

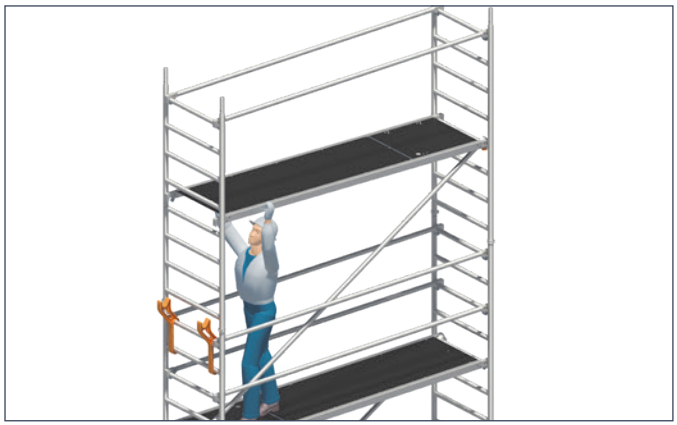
1. Fit the first ladder frame 75/8 **15** and secure it using spring clips **16**.



2. Attach the Uni assembly hooks **29** and position the second ladder frame 75/8 **15** in order to fit the guardrails **17**.



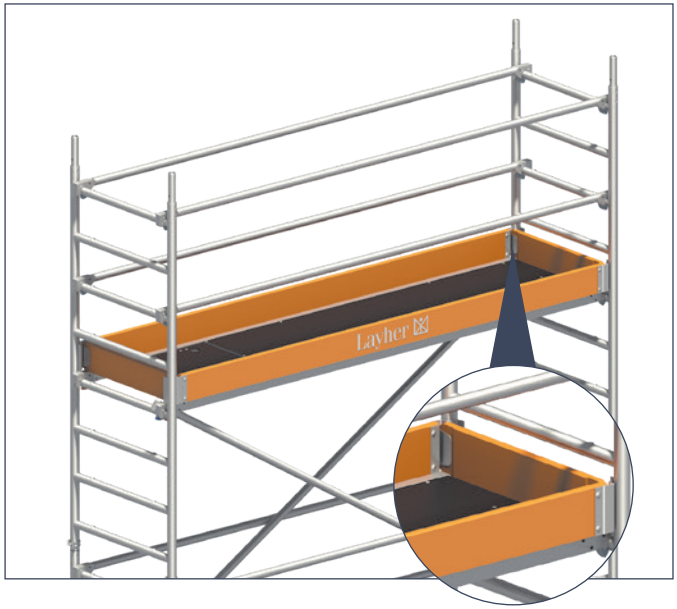
3. Swivel the ladder frame 75/8 **15** with guardrails **17** upwards, fit it in place and secure it with spring clips **16**.



4. Insert diagonal braces **22** and access deck **27**. Install the diagonal braces on both sides in tower-like (zig-zag) form.

5. Climb up on the inside using the rungs of the ladder frame and through the access hatch provided. While sitting in the access hatch opening, protected from falling by the sides of the access deck **27**, assemble the intermediate rail of the next level: to do so, fit the guardrails **17** to the second rungs above the standing surface.

COMPLETING THE WORKING PLATFORM
All tower models for construction of the respective working platform



To complete the working platform, attach toe boards with claw **32** and end toe boards **33**.

If an intermediate platform is used for working, attach toe boards here too.

3.1.5 DISMANTLING SEQUENCE SAFETY ASSEMBLY P2

Repeat the following dismantling steps 1 to 8 several times depending on the assembly height.

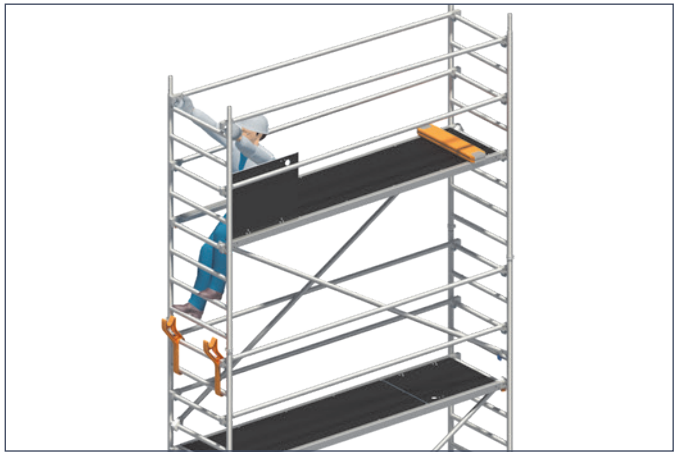
Dismantling is performed in the reverse order to assembly.

When dismantling, do not remove the bracing elements such as diagonal braces, guardrails or access decks until the ladder frames above them have been dismantled.

To lift out the individual parts, open the snap-on claws by pressing their locking clips.

1. Dismantle the toe boards **32/33** (only necessary on the working platform).

2. While sitting in the access hatch opening, protected from falling by the sides of the access deck **27**, dismantle and put down the snap-on claws of both guardrails on one side, the side of the access hatch, 1 metre above the standing surface.

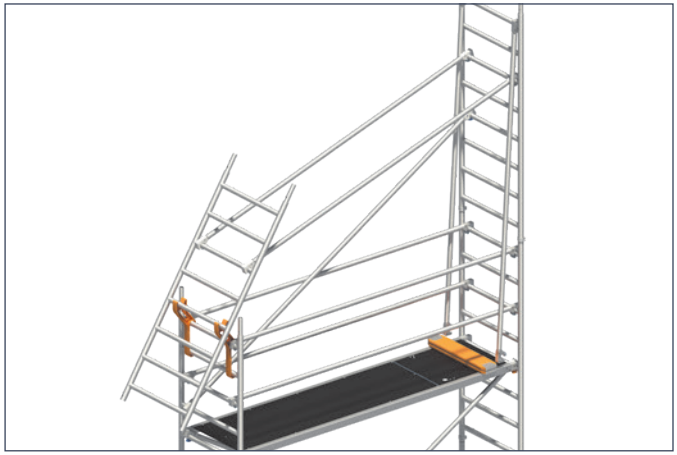


3. After climbing down to the platform underneath, dismantle the access deck **27** and the diagonal braces **22**.

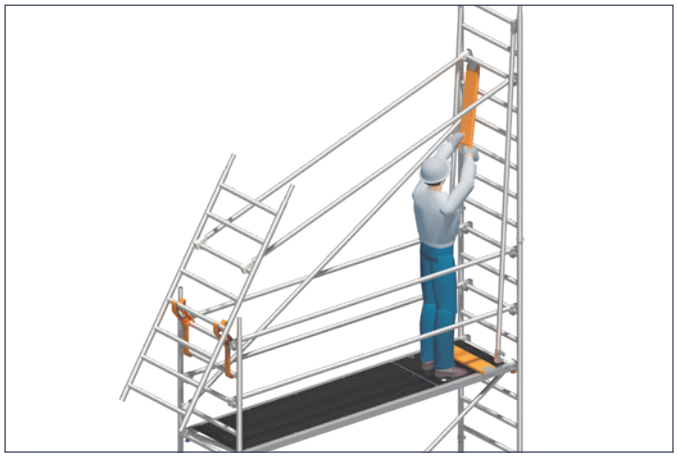
4. Attach the Uni assembly hooks **29** at the side of the access hatch opening above and remove the spring clips **16** on one side.

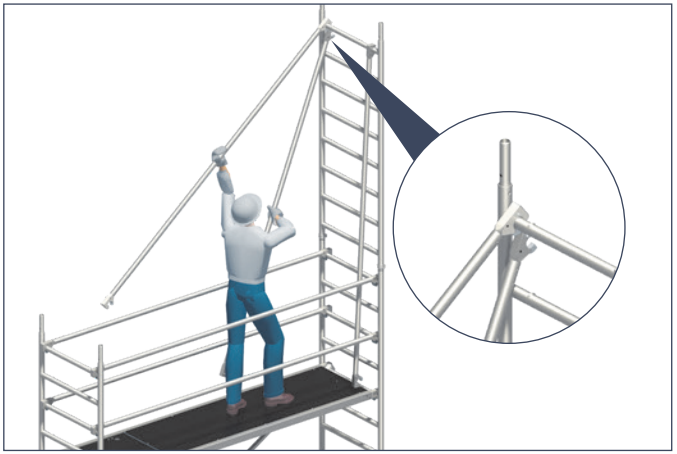
5. Lift out the ladder frame 75/8 **15** on the side of the Uni assembly hooks and swivel it downwards with the guardrails released under **2.** and the still attached intermediate rails, in order to position this unit into the previously fitted Uni assembly hooks **29**. Take care when swivelling it down that the guardrails **17** released on one side at the top rung of the ladder frame 75/8 **15** can slide outwards, allowing the complete unit to be positioned in the Uni assembly hooks **29**.

6. Moving the upper guardrails **17**, already released on one side, on the outside past the upper ends of the ladder frame 75/8 **15** positioned in the Uni assembly hooks **29** allows the ladder frame to be positioned for later dismantling.



7. Using the end toe board **33** or a guardrail **17** additionally available, to act as an extension, release the locking clip of the snap-on claws on one of the intermediate rails or guardrails **17** still attached about 2.5 metres up in order to lift out the snap-on claw on one side. After that, release the guardrail **17** released on one side, at that side in which it is positioned in the Uni assembly hooks **29**, and remove it by rotating it 90° about its own axis.





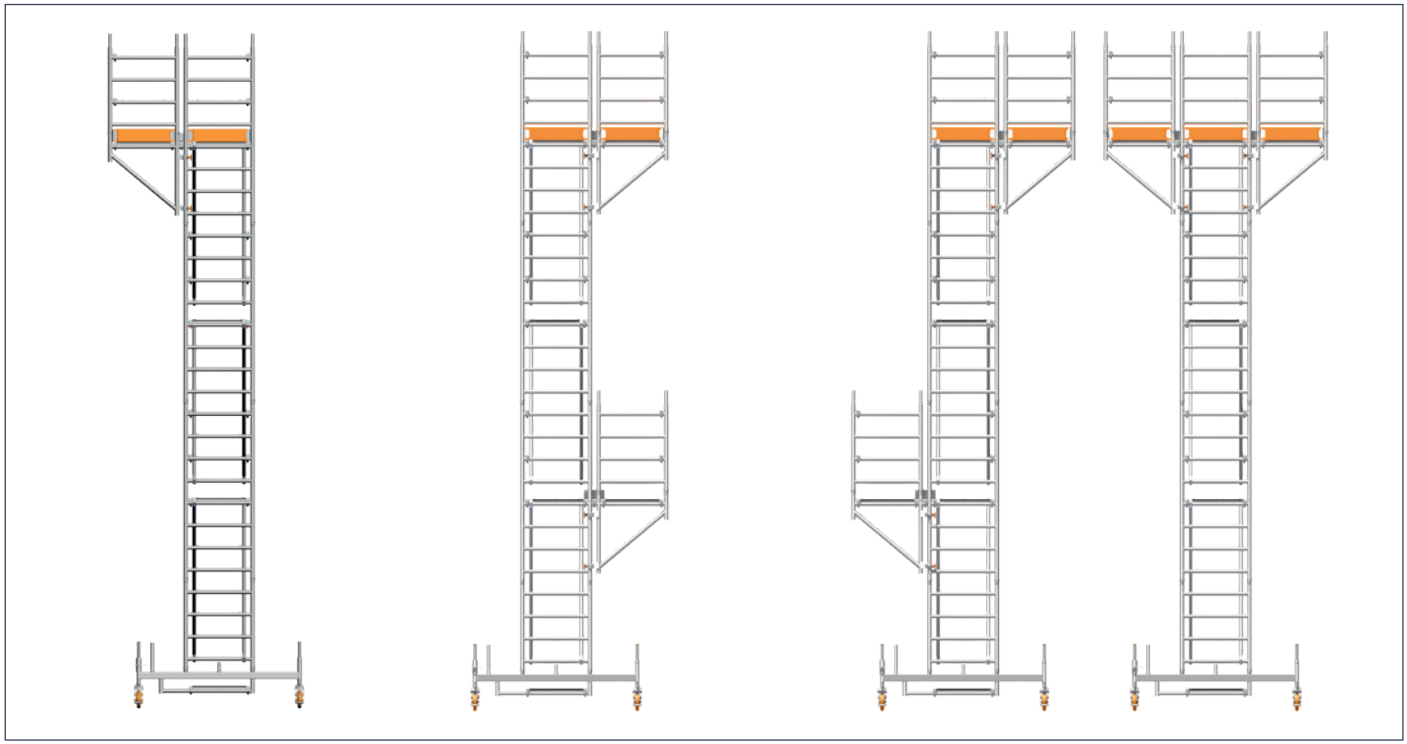
8. Lift out the intermediate rail still remaining / guardrail **17** on one side, on that side in which it is positioned in the Uni assembly hooks **29** and swivel the ladder frame 75/8 **15** in the Uni assembly hooks **29** into a vertical position. This is followed by removal, using the guardrail **17** already removed under **7.** as an extension, of the three guardrails **17** still remaining. Place the loose guardrail **17** onto the rung underneath, for use as a lever to open the locking clip of the snap-on claw (see detail).

3.1.6 ASSEMBLY WITH BRACKETS

Please refer to the table on page 10 to see which tower models are allowed to be extended with brackets.

When brackets are used, the following points must be noted in addition:

- The tower may be loaded with 1.5 kN / m2 (load class 2) at one working level only.
- To ensure stability, do not extend the spindles when assembling with brackets.
- Two additional guardrails are required for providing the necessary two-part side protection using Safety Assembly P2.
- The respective working platform must be equipped with complete side protection.
- The ladder frames must be assembled in the centre position.
- The corresponding ballast weights (see ballasting tables on pages 10 – 12) must be attached before fitting the brackets.
- A maximum of two bracket deck surfaces can be fitted to a tower. The bracket deck surfaces can be used either singly on one side, both on one side or one on each side.
- The bracket deck surfaces can be fitted at any level of the tower where a deck is provided.



If the ballasting table is not complied with, there is an increased risk of accidents as a result of the tower tipping because of uneven loading.

Assembly

1. The tower is assembled up to the height required in accordance with the assembly sequence already described. (page 15 ff.).

2. Before attaching the brackets **30**, remove the toe boards **32 / 33** .

3. At the level in question, bolt on two brackets **30** on each side using the couplers in such a way that the rungs of the brackets **30** are at the same height as the rungs of the ladder frame **14 / 15** .

4. Now hook the decks **28** into the rungs of the bracket **30**.

5. Fit the intermediate deck(s) **31** between the deck **28** in the bracket **30** and the access deck **27** in the basic structure.

6. Fit one ladder frame 75/4 **14** onto each bracket **30**.

7. Use two additional guardrails **17** to now construct the side protection of the first or one-side bracket deck surface. Pass the two guardrails **17** over the existing side protection of the basic structure and hook them into the ladder frames 75/4 **14** of the bracket deck surface in the top and third-from-top rungs. For a bracket deck surface on both sides, remove the side protection of the basic structure on which the side protection is already provided at the bracket deck surface. Pass the two guardrails **17** in the same way, for the second bracket deck surface too, over the still-present side protection of the basic structure and fit them into the ladder frames 75/4 **14** in the top and third-from-top rungs. The two guardrails **17**, which are after completion of the two-part side protection of the bracket deck surface(s) still present in the basic structure, can be removed and transported downwards or deposited in the rungs of the ladder frames 75/4 **14** of the bracket deck surface(s).

8. Complete the three-part side protection, which depends on the tower model concerned, by installing the toe boards with claw **32**; position the latter on the bracket, on the longitudinal side between the ladder frames 75/4 **14** , and secure them by inserting end toe boards **33** between the toe board with claw **32** and the intermediate deck **31**.

Dismantling

Dismantle the bracket deck surfaces in the reverse order to assembly. After removal of the bracket deck surfaces and restoring the required two-part side protection in the basic structure, the entire tower can be dismantled as described in the dismantling sequence (see page 20–21).

3.2 ROLLING TOWERS WITH SAFETY ASSEMBLY P2 WITH UNI TELESCOPING GUARDRAIL

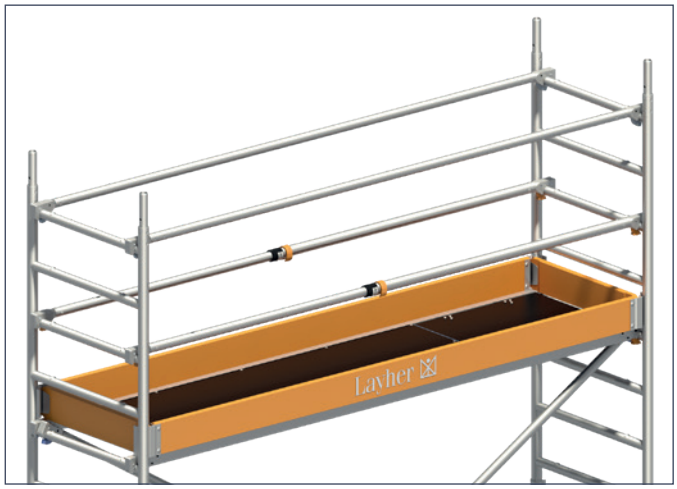
3.2.1 MEASURES FOR FALL PROTECTION

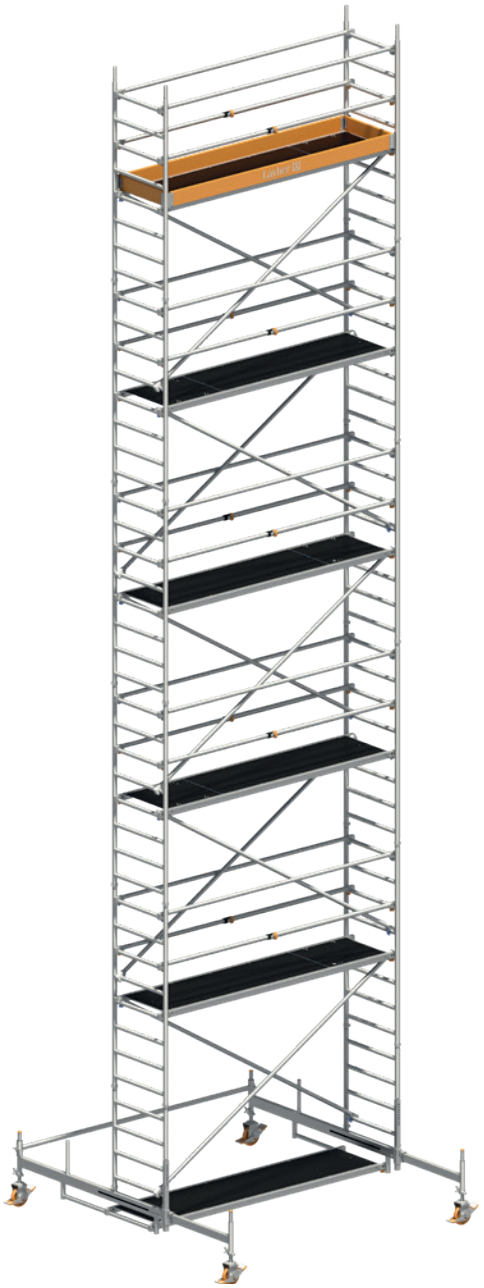
Suitable measures for fall protection must be taken during assembly, modification or dismantling of the scaffolding structure. Safety Assembly P2 with Uni Telescoping Guardrail implements these protective measures in full.

Safety Assembly P2 with Uni Telescoping Guardrail

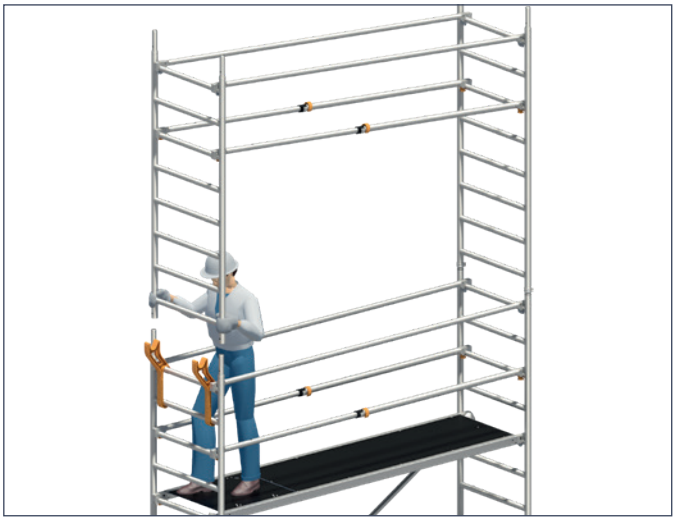
- Platforms with vertical spacing of 2 m.
- Safer design with integrated and collective advancing side protection.

Thanks to the platforms, which are assembled 2 m apart, both the handrails andthe intermediate rails (Uni Telescoping Guardrail) can be fitted from the level underneath it, so that when the next-up platform is accessed there is already a double side protection in place on all sides.



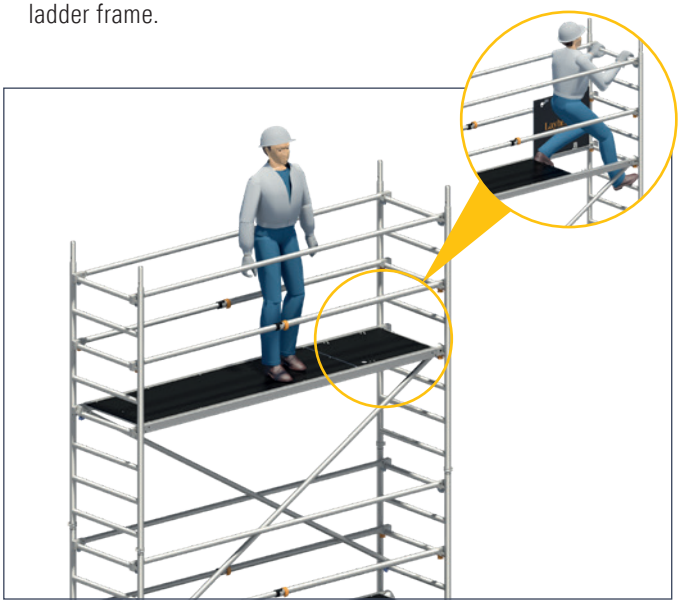


1. Attach the first ladder frame. Attach the Uni assembly hooks and position the second ladder frame in order to fit the guardrails and the Telescoping Guardrails as intermediate rails.



2. Swivel the ladder frame with the guardrails and the Uni Telescoping Guardrails up wards and fit it onto the lower ladder frame.

3. Insert diagonal braces and access deck.

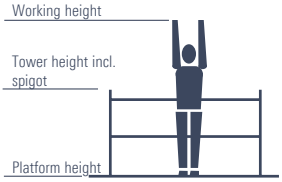


4. Access to the already secured level.

3.2.2 TOWER MODELS

1411102 – 1411111

For **assembly outdoors** comply with the height restriction!



1401101: no Safety Assembly P2 required – see Section 3.1.2

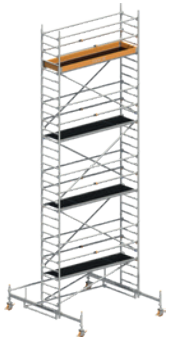
1411102

1411103

1411104

1411105

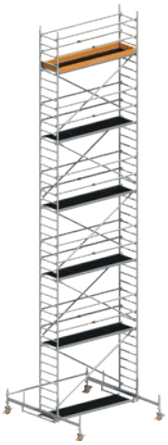
1411106



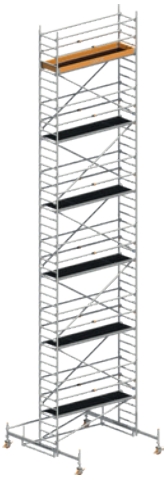
1411107

1411108

1411109



1411110



1411111

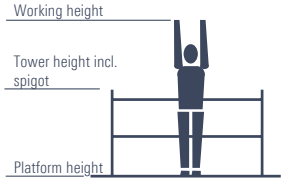
Tower model	1411102	1411103	1411104	1411105	1411106	1411107	1411108	1411109	1411110	1411111
Working height [m]	4.35	5.35	6.35	7.35	8.35	9.38	10.38	11.38	12.38	13.38
Tower height [m]	3.58	4.58	5.58	6.58	7.58	8.61	9.61	10.61	11.61	12.61
Platform height [m]	2.35	3.35	4.35	5.35	6.35	7.38	8.38	9.38	10.38	11.38
Weight [kg] (without ballast)	180.9	216.3	243.2	278.6	305.5	392.1	419.0	454.4	481.3	516.7
Ballasting (stated in units)										
Indoors										
Assembly in the centre*	0	0	0	0	0	0	0	0	0	0
Assembly off-centre	0	0	L0 R4	L0 R4	L0 R6	L0 R4	L0 R6	L0 R6	L0 R8	L0 R10
Assembly off-centre with wall bracing	0	0	0	0	0	0	0	0	0	0
Assembly in the centre with 1 bracket*	0	0	L0 R2	L0 R4	L0 R6	0	0	0	0	0
Assembly in the centre with 2 brackets*	0	0	0	0	0	0	0	0	0	0
Outdoors										
Assembly in the centre*	0	l1 r1	l5 r5	l9 r9	l15 r15	l2 r2	X	X	X	X
Assembly off-centre	L0 R2	L0 R6	L0 R10	L4 R16	L10 R22	L0 R18	X	X	X	X
Assembly off-centre with wall bracing	0	0	0	L4 R0	L10 R0	0	X	X	X	X
Assembly in the centre with 1 bracket*	L0 R4	L0 R8	L2 R12	L6 R16	L12 R22	X	X	X	X	X
Assembly in the centre with 2 brackets*	l2 r2	l5 r5	l8 r8	X	X	X	X	X	X	X

* For assembly with adjustable mobile beam, the latter must be fully extended. X = not permissible / not possible 0 = no ballast required For ballasting, use Layher ballast weights, Ref. No. 1249.000, of 10 kg each.
Fasten the weights quickly and securely at the right place using the coupler handwheel. All heights stated without possible spindle extension! The max. spindle extension of the relevant assembly variants can be found in the corresponding section! **Do not use any liquid or granular ballast substances. The ballast weights must be distributed evenly to all ballasting fixing points.**
Example: l2, r2 → Fasten 2 ballast weights of 10 kg each to the ladder frame on its left-hand side, and 2 ballast weights of 10 kg each on its right-hand side.
L6, R16 → Fasten 6 ballast weights of 10 kg each to the mobile beam on its left-hand side, and 16 ballast weights of 10 kg each on its right-hand side
r and R relate in the case of off-centre assembly always to the side facing away from the tower; l and L relate to the side facing the tower.

1411122 – 1411131

with Uni Telescoping Guardrail and stabilisers, extendable

For **assembly outdoors** comply with the height restriction!



1411122

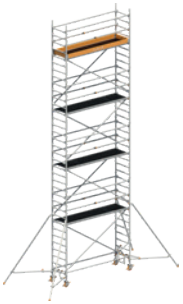
1411123

1411124

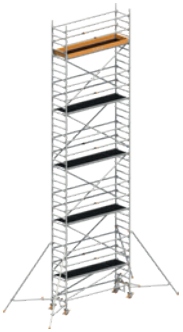
1411125

1411126

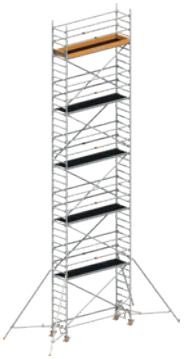
1411127



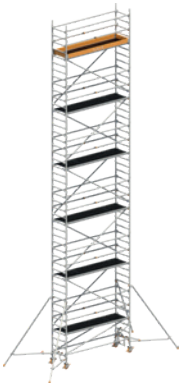
1411128



1411129



1411130



1411131

Tower model	1411122	1411123	1411124	1411125	1411126	1411127	1411128	1411129	1411130	1411131
Working height [m]	4.20	5.20	6.20	7.20	8.20	9.20	10.20	11.20	12.20	13.20
Tower height [m]	3.43	4.43	5.43	6.43	7.43	8.43	9.43	10.43	11.43	12.43
Platform height [m]	2.20	3.20	4.20	5.20	6.20	7.20	8.20	9.20	10.20	11.20
Weight [kg] (without ballast)	169.8	221.6	232.1	283.9	294.4	346.2	356.7	408.5	419.0	470.8
Ballasting (stated in units)										
Indoors										
Assembly in the centre	0	0	0	0	0	0	0	0	0	0
Assembly off-centre	L0 R2	L0 R4	L0 R6	L0 R8	L0 12R	L0 R12	L0 R16	L0 R18	L0 R20	L0 R22
Assembly off-centre with wall bracing	0	0	0	0	0	0	0	0	0	0
Outdoors										
Assembly in the centre	0	0	0	0	0	0	X	X	X	X
Assembly off-centre	L0 R8	L0 R10	L0 R16	L0 R20	L0 R28	L0 R34	X	X	X	X
Assembly off-centre with wall bracing	0	0	0	0	0	0	X	X	X	X

X = not permissible / not possible 0 = no ballast required For ballasting, use Layher ballast weights, Ref. No. 1249.000, of 10 kg each. Fasten the weights quickly and securely at the right place using the coupler handwheel. All heights stated without possible spindle extension! The max. spindle extension of the relevant assembly variants can be found in the corresponding section! **Do not use any liquid or granular ballast substances. The ballast weights must be distributed evenly to all ballasting fixing points.**

Example: l2, r2 → Fasten 2 ballast weights of 10 kg each to the ladder frame on its left-hand side, and 2 ballast weights of 10 kg each on its right-hand side.
L6, R16 → Fasten 6 ballast weights of 10 kg each to the mobile beam on its left-hand side, and 16 ballast weights of 10 kg each on its right-hand side
r and R relate in the case of off-centre assembly always to the side facing away from the tower; l and L relate to the side facing the tower.

3.2.3 PARTS LIST

Safety Assembly P2 with Uni Telescoping Guardrail, Tower models 1411102 – 1411111

Tower model	Ref. No.	1411102	1411103	1411104	1411105	1411106	1411107	1411108	1411109	1411110	1411111
Uni Telescoping Guardrail	1204.180	2	4	4	6	6	8	8	10	10	12
Guardrail 2.85 m	1205.285	2	5	4	7	6	9	8	11	10	13
Double guardrail 2.85 m	1206.285	0	0	0	0	0	0	0	0	0	0
Diagonal brace 2.85 m	1208.285	2	2	4	4	6	6	8	8	10	10
Diagonal brace 2.95 m	1208.295	0	2	0	2	0	2	0	2	0	2
Basic tube 2.85 m	1211.285	1	1	1	1	1	1	1	1	1	1
Deck 2.85 m	1241.285	1	0	1	0	1	0	1	0	1	0
Access deck 2.85 m	1242.285	1	2	2	3	3	4	4	5	5	6
Spring clip	1250.000	8	8	12	12	16	16	20	20	24	24
Ladder frame 75/4 - 1.00 m	1297.004	2	0	2	0	2	0	2	0	2	0
Ladder frame 75/8 - 2.00 m	1297.008	2	4	4	6	6	8	8	10	10	12
Uni assembly hook	1300.010	1	1	1	1	1	1	1	1	1	1
Mobile beam with access ledger	1323.180	2	2	2	2	2	0	0	0	0	0
Mobile beam with access ledger, adjustable	1323.320	0	0	0	0	0	2	2	2	2	2
Wheel 700	1359.200	4	4	4	4	4	4	4	4	4	4
End toe board	1438.075	2	2	2	2	2	2	2	2	2	2
Toe board with claw	1439.285	2	2	2	2	2	2	2	2	2	2
Ballast	1249.000	Number of ballast weights, see Section 3.2.2: Tower models									

Safety Assembly P2 with Uni Telescoping Guardrail with stabiliser, extendable Tower models 1411122 – 1411131

Tower model	Ref. No.	1411122	1411123	1411124	1411125	1411126	1411127	1411128	1411129	1411130	1411131
Uni Telescoping Guardrail	1204.180	2	4	4	6	6	8	8	10	10	12
Guardrail 2.85 m	1205.285	4	6	6	8	8	10	10	12	12	14
Diagonal brace 2.85 m	1208.285	2	2	4	4	6	6	8	8	10	10
Diagonal brace 2.95 m	1208.295	0	2	0	2	0	2	0	2	0	2
Access deck 2.85 m	1242.285	1	2	2	3	3	4	4	5	5	6
Stabiliser, extendable	1248.260	4	4	4	4	4	4	4	4	4	4
Rotation lock for stabiliser	1248.261	4	4	4	4	4	4	4	4	4	4
Spring clip	1250.000	4	4	8	8	12	12	16	16	20	20
Ladder frame 75/4 - 1.00 m	1297.004	2	0	2	0	2	0	2	0	2	0
Ladder frame 75/8 - 2.00 m	1297.008	2	4	4	6	6	8	8	10	10	12
Uni assembly hook	1300.010	1	1	1	1	1	1	1	1	1	1
Access ledger	1344.002	1	1	1	1	1	1	1	1	1	1
Wheel 700	1359.200	4	4	4	4	4	4	4	4	4	4
End toe board	1438.075	2	2	2	2	2	2	2	2	2	2
Toe board with claw	1439.285	2	2	2	2	2	2	2	2	2	2
Ballast	1249.000	Number of ballast weights, see Section 3.2.2: Tower models									

Extra requirements for assembly with bracket deck surfaces

Tower model	Ref. No.	1 bracket deck surface	2 bracket deck surfaces
Guardrail 2.85 m	1205.285	2	2
Deck 2.85 m	1241.285	1	2
Spring clip	1250.000	4	8
Ladder frame 75 / 4	1297.004	2	4
Intermediate deck	1339.285	1	2
Aluminium bracket 0.75 m	1341.075	2	4
End toe board 0.75 m	1438.075	2	4

The tower models, that may be widened using **bracket deck surfaces**, can be found on page 26 (ballasting). When using brackets, the tower may only be loaded with 1.5 kN / m² (load class 2) at one working level only. A maximum of two bracket deck surfaces may be attached. When bracket deck surfaces are fitted, the spindles must not be extended. The respective working level must be equipped with complete side protection.

3.2.4 ASSEMBLY SEQUENCE SAFETY ASSEMBLY P2 WITH UNI TELESCOPING GUARDRAIL

Observe the general directions for assembly and use on pages 5 – 7. The assembly examples shown are intended for use up to a maximum platform height of 12 m indoors and up to a maximum platform height of 8 m outdoors. Snap-on claws must, unless explicitly mentioned in the test, be generally snapped into the ladder frames from above. Level the scaffolding structure after basic assembly. This is done using the threaded spindles of the wheels.

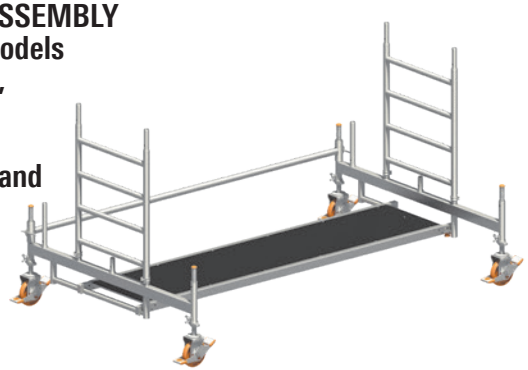
The wheels must be locked during assembly, modification or dismantling and while there is anybody on the tower.

Hammer home the wedges in the system until the blow bounces off. Always tighten the screw couplers well (50 Nm).

At the top level, a double guardrail **18** or a tower beam **21** can be fitted instead of two single guardrails **17**. Please remember in this case that two additional guardrails **17** and two additional Uni Telescoping Guardrails **20** must be provided for assembly and dismantling in order to ensure collective two-part side protection. They can be removed again after insertion of the double guardrail **18** or the tower beam **21**.

The **item numbers** for the components relate to the component list on pages 63 – 67.

BASIC ASSEMBLY
Tower models 1411102, 1411104, 1411106, 1411108 and 1411110



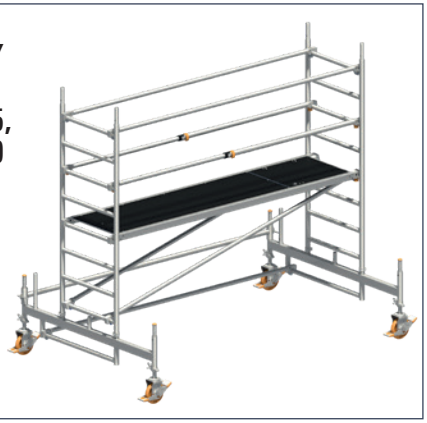
1. Insert the wheels **1** into the mobile beams **6 / 7** and secure them against falling out by tightening the wing screws on the spindle nuts.

2. Connect the mobile beams **6 / 7** to a basic tube **9** – or optionally to a basic strut **10** – and a deck **28**.

3. Fit two ladder frames 75/4 **14** onto the mobile beams and secure them using spring clips **16**.

Further assembly is performed as per page 32, "Assembly of intermediate platforms".

BASIC ASSEMBLY
Tower models 1411103, 1411105, 1411107, 1411109 and 1411111



1. Insert the wheels **1** into the mobile beams **6/7** and secure them against falling out by tightening the wing screws on the spindle nuts.

2. Connect the mobile beams **6/7** to one another with a basic tube **9** – or optionally with a basic strut **10** – and a guardrail **17** on the access ledger of the mobile beam.

3. Fit a ladder frame 75/8 **15** onto the mobile beam **6/7** and secure it using spring clips **16**. Hook two guardrails **17** over the top rung and connect them to a second ladder frame 75/8 **15**. Hook two Uni Telescoping Guardrails **20** two rungs below the guardrails **17** and connect them to the second ladder frame 75/8 **15** too in the appropriate rungs. Then swivel the second ladder frame 75/8 **15** upwards, fit it onto the mobile beam and secure it using spring clips **16**.

   *Any double guardrails **18** that might be in stock should be installed as side protection for the first platform. In this case, assembly can be performed from the assembly surface (ground) with the ladder frames 75/8 **15** fitted on both sides.*

4. Fit two diagonal braces **23** and an access deck **27**. **Ensure that the two diagonal braces are installed parallel to one an other in the direction of the access hatch.**

Further assembly is performed as per page 32, "Assembly of intermediate platforms".

BASIC ASSEMBLY
Tower models 1411122, 1411124, 1411126, 1411128 and 1411130

1. Insert the wheels **1** into the ladder frames 75/4 **14** and secure them against falling out by tightening the wing screws on the spindle nuts.

2. Fit a ladder frame 75/8 **15** on one side and secure it using spring clips **16**. Fit the first diagonal brace **22** for bracing, from the fourth rung from the bottom of the ladder frame 75/8 **15** to the bottom rung of the opposite ladder frame 75/4 **14**.

3. Hook two guardrails **17** over the top rung and connect them to a second ladder frame 75/8 **15**. Hook two Uni Telescoping Guardrails **20** two rungs below the guardrails **17** and connect them to the second ladder frame 75/8 **15** too in the appropriate rungs. Then swivel the second ladder frame 75/8 **15** upwards, fit it onto the second ladder frame 75/4 **14** and secure it using spring clips **16**.

4. Hook in an access deck **27** and install the second diagonal brace **22** crosswise to the already fitted one. Assemble two guardrails **17** at the bottom rung of the ladder frame 75/4 **14**.

5. To maintain the maximum distance from the first rung, fit an access ledger **11** on the ascent side of the rolling tower.

Further assembly is performed as per page 32, “Assembly of intermediate platforms”.
Further assembly for model 1411122 is performed as per page 33 “Completing the working platform”.

BASIC ASSEMBLY
Tower models 1411123, 1411125, 1411127, 1411129 and 1411131

1. Insert the wheels **1** into the ladder frames 75/8 **15** and secure them against falling out by tightening the wing screws on the spindle nuts.

2. Position a ladder frame 75/8 **15**, hook two guardrails **17** over the top rung connect them to a second ladder frame 75/8 **15**. Hook two Uni Telescoping Guardrails **20** two rungs below the guardrails **17** and connect them to the second ladder frame 75/8 **15** too in the appropriate rungs. Then position the second ladder frame 75/8 **15** parallel to the first ladder frame and brace them in the same direction by means of the two short diagonal braces **23**. **Ensure that the two diagonal braces are installed parallel to one another in the direction of the access hatch.**

   *Any double guardrails **18** that might be in stock should be installed as side protection for the first platform. In this case, assembly can be performed from the assembly surface (ground) with the ladder frames fitted on both sides.*

3. Fit two guardrails **17** to the bottom rung of the ladder frames and an access deck **27** to the fourth rung from the bottom.

4. To maintain the maximum distance from the first rung, fit an access ledger **11** on the ascent side of the rolling tower.

Further assembly is performed as per page 32, “Assembly of intermediate platforms”.

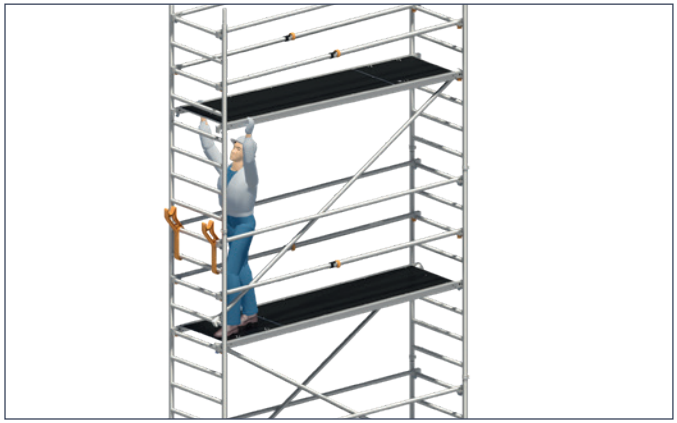
ASSEMBLY OF INTERMEDIATE PLATFORMS
All tower models with Safety Assembly P2 with Uni Telescoping Guardrail

Repeat the following assembly steps 1 to 5 several times depending on the assembly height.

1. Fit the first ladder frame 75/8 **15** and secure it using spring clips **16**.

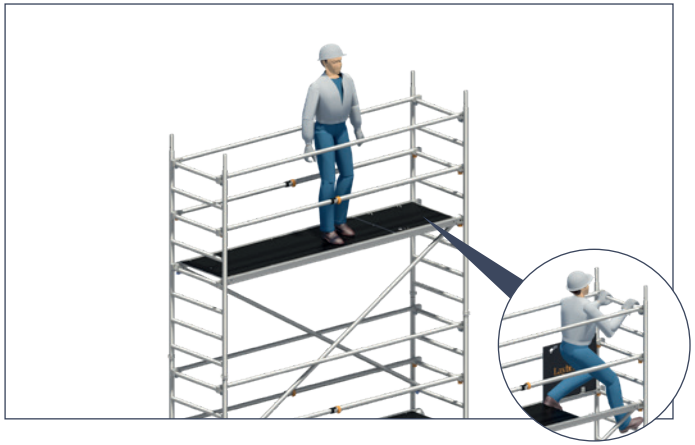
2. Attach the Uni assembly hooks **29** and position the second ladder frame 75/8 **15**. Hook two guardrails **17** over the top rung of the fitted ladder frame 75/8 **15** and connect them to a second ladder frame 75/8 **15**. Hook two Uni Telescoping Guardrails **20** two rungs below the guardrails **17** and connect them to the second ladder frame 75/8 **15** too in the appropriate rungs.

3. Swivel the second ladder frame 75/8 **15** upwards together with the preassembled side protection, fit it and secure it using spring clips **16**.



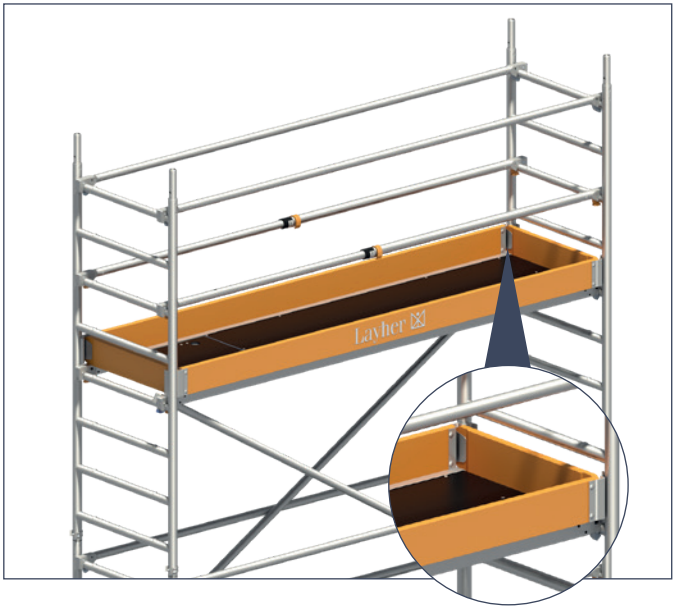
4. Insert both diagonal braces **22** and the access deck **27**.

*It should be ensured that the diagonal braces **22** each cross over inside the bay and additionally have a tower-like (zig-zag) form on both sides.*



5. Move to the next platform up, which has already been fully secured with two-part side protection.

COMPLETING THE WORKING PLATFORM
All tower models for construction of the respective working platform



To complete the working platform, attach toe boards with claw **32** and end toe boards **33**.

If an intermediate platform is used for working, attach toe boards here too.

3.2.5 DISMANTLING SEQUENCE SAFETY ASSEMBLY P2 WITH UNI TELESCOPING GUARDRAIL

Repeat the following dismantling steps 1 to 6 several times depending on the assembly height.

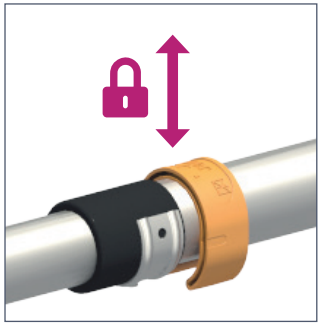
Dismantling is performed in the reverse order to assembly.

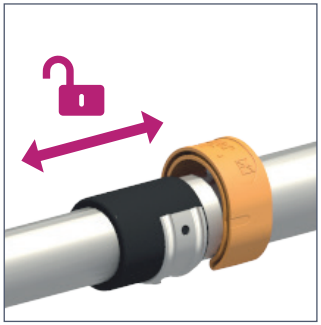
When dismantling, do not remove the bracing elements such as diagonal braces, guardrails or access decks until the ladder frames above them have been dismantled.

To lift out the individual parts, open the snap-on claws by pressing their locking clips.

1. Dismantle the toe boards **32/33** (only necessary on the working platform).

2. Before climbing down, ensure that the plastic spring clips of the Uni Telescoping Guardrail **20** are released so that the guardrail can be telescoped (see detailed images).

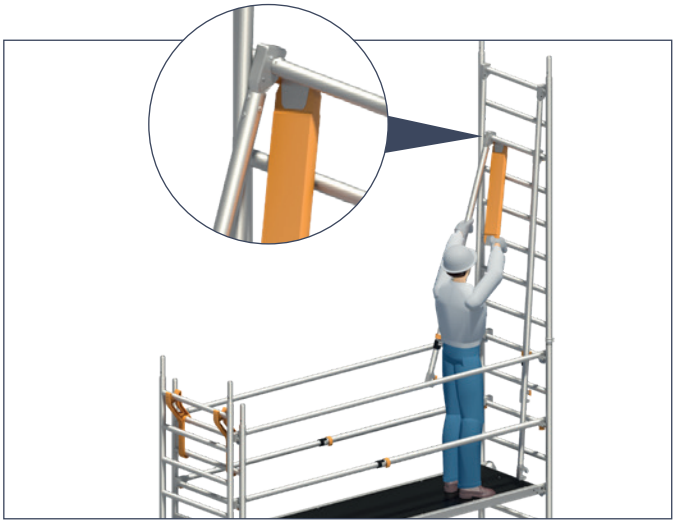




3. After climbing down to the platform underneath, dismantle the access deck **27** and the diagonal braces **22**.

4. Attach the Uni assembly hooks **29** on one side and remove the spring clips **16** on the same side.

5. Lift out the ladder frame 75/8 **15** on the side of the Uni assembly hooks, swivel it downwards together with the still-fitted side protection and position it in the assembly hooks **27**.



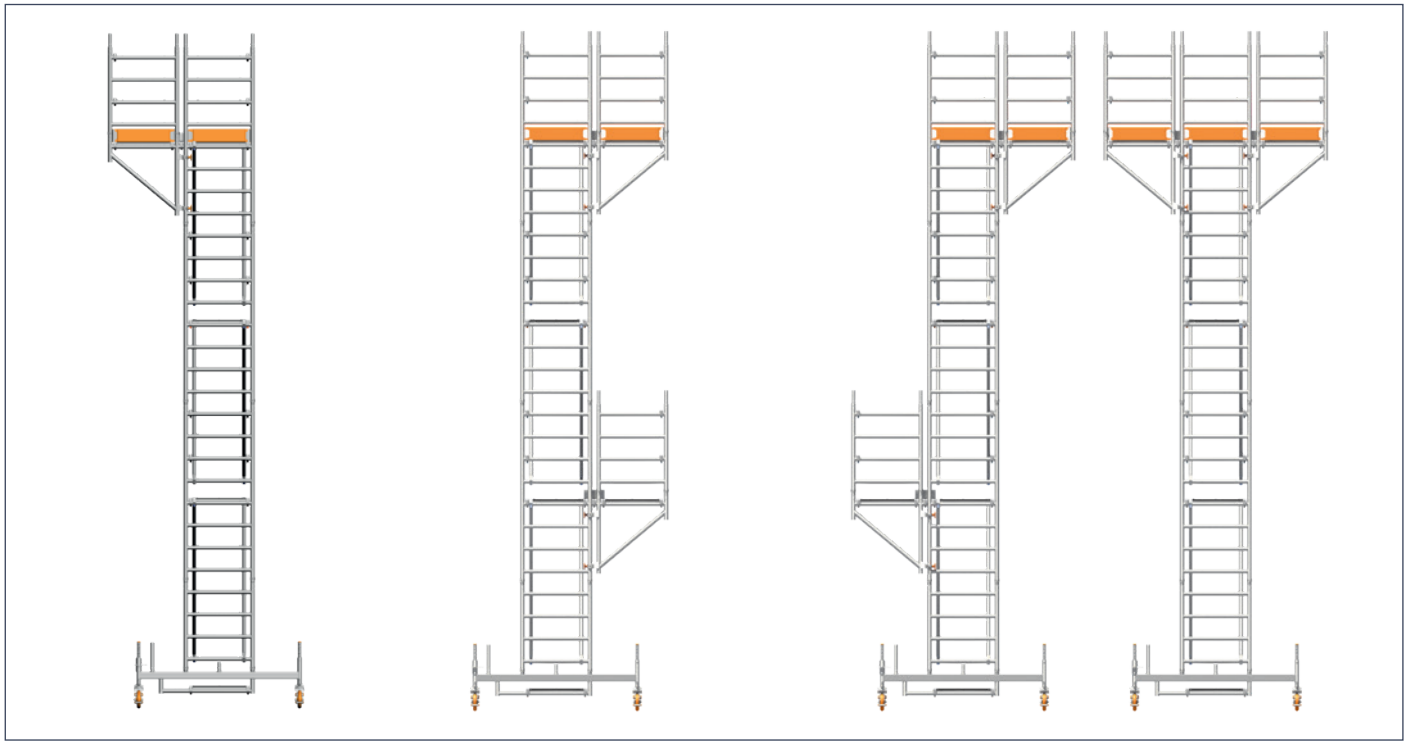
6. Dismantling the side protection. Release all snap-on claws of the Uni Telescoping Guardrails **20** and the guardrails **17** from the rungs of the ladder frame 75/8 **15** on the side positioned in the Uni assembly hooks **29**. All guardrails can be placed suspended from the opposite ladder frame 75/8 **15** and remain there until the ladder frame positioned in the assembly hook **27** has been secured against falling out or tipping over. Complete dismantling of the side protection can then follow. Using an end toe board **33** or a guardrail **17** additionally available, to act as an extension, first release the locking clips of the snap-on claws from the Uni Telescoping Guardrails **20** about 2.5 metres up in order to lift out the snap-on claw from the rungs. This is followed by dismantling of the guardrail **17** fitted above it in the same way.

3.2.6 ASSEMBLY WITH BRACKETS

Please refer to the table on page 26 to see which tower models are allowed to be extended with brackets.

When brackets are used, the following points must be noted in addition:

- The tower may be loaded with 1.5 kN/m² (load class 2) at one working level only.
- To ensure stability, do not extend the spindles when assembling with brackets.
- Two additional guardrails are required for providing the necessary two-part side protection using Safety Assembly P2 with the Uni Telescoping Guardrail.
- The respective working platform must be equipped with complete side protection.
- The ladder frames must be assembled in the centre position.
- The corresponding ballast weights (see ballasting tables on pages 26–27) must be attached before fitting the brackets.
- A maximum of two bracket deck surfaces can be fitted to a tower. The bracket deck surfaces can be used either singly on one side, both on one side or one on each side.
- The bracket deck surfaces can be fitted at any level of the tower where a deck is provided.



If the ballasting table is not complied with, there is an increased risk of accidents as a result of the tower tipping because of uneven loading.

Assembly

1. The tower is assembled up to the height required in accordance with the assembly sequence already described. (page 29 ff.).

2. Before attaching the brackets **30**, remove the toe boards **32/33** .

3. At the level in question, bolt on two brackets **30** on each side using the couplers in such a way that the rungs of the brackets **30** are at the same height as the rungs of the ladder frame **14/15**.

4. Now hook the decks **28** into the rungs of the bracket **30**.

5. Fit the intermediate deck(s) **31** between the deck **28** in the bracket **30** and the access deck **27** in the basic structure.

6. Fit one ladder frame 75/4 **14** onto each bracket **30**.

7. Use two additional guardrails **17** to now construct the side protection of the first or one-side bracket deck surface. Pass the two guardrails **17** over the existing side protection of the basic structure and hook them into the ladder frames 75/4 **14**of the bracket deck surface in the top and third-from-top rungs. For a bracket deck surface on both sides, remove the side protection of the basic structure on which the side protection is already provided at the bracket deck surface. Fit the guardrail **17** on the top rung, and the Uni Telescoping Guardrail **20** on the third-from-top rung over the still-existing side protection of the basic structure, in the ladder frames 75/4 **14** of the bracket. The guardrail **17** and the Uni Telescoping Guardrail **20**, which are after completion of the two-part side protection of the bracket deck surface(s) still present in the basic structure, can be removed and transported downwards or deposited in the rungs of the ladder frames 75/4 **14** of the bracket deck surface(s).

8. Complete the three-part side protection, which depends on the tower model concerned, by installing the toe boards with claw **32**. Position the latter on the bracket, on the longitudinal side between the ladder frames 75/4 **14**, and secure them by inserting end toe boards **33** between the toe board with claw **32** and the intermediate deck **31**.

Dismantling

Dismantle the bracket deck surfaces in the reverse order to assembly. After removal of the bracket deck surfaces and restoring the required two-part side protection in the basic structure, the entire tower can be dismantled as described in the dismantling sequence (see pages 34–35).

3.3 ROLLING TOWERS WITH SAFETY ASSEMBLY P2 SAFETY[PLUS] WITH DOUBLE GUARDRAIL

3.3.1 MEASURES FOR FALL PROTECTION

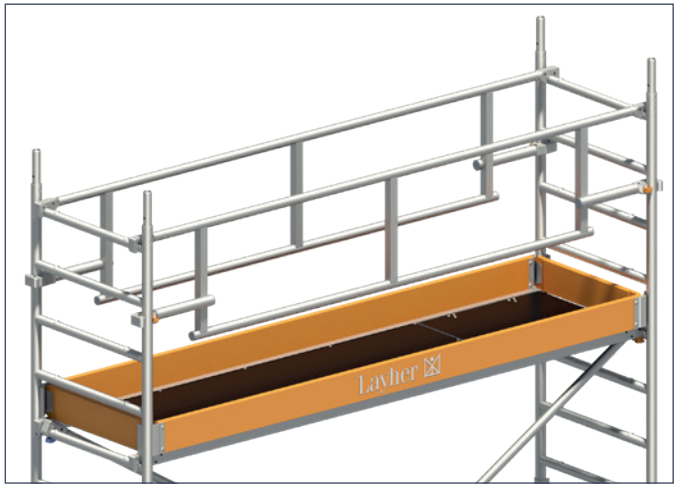
Suitable measures for fall protection must be taken during assembly, modification or dismantling of the scaffolding structure. Safety Assembly P2 SAFETY[PLUS] with double guardrail implements these protective measures in full.

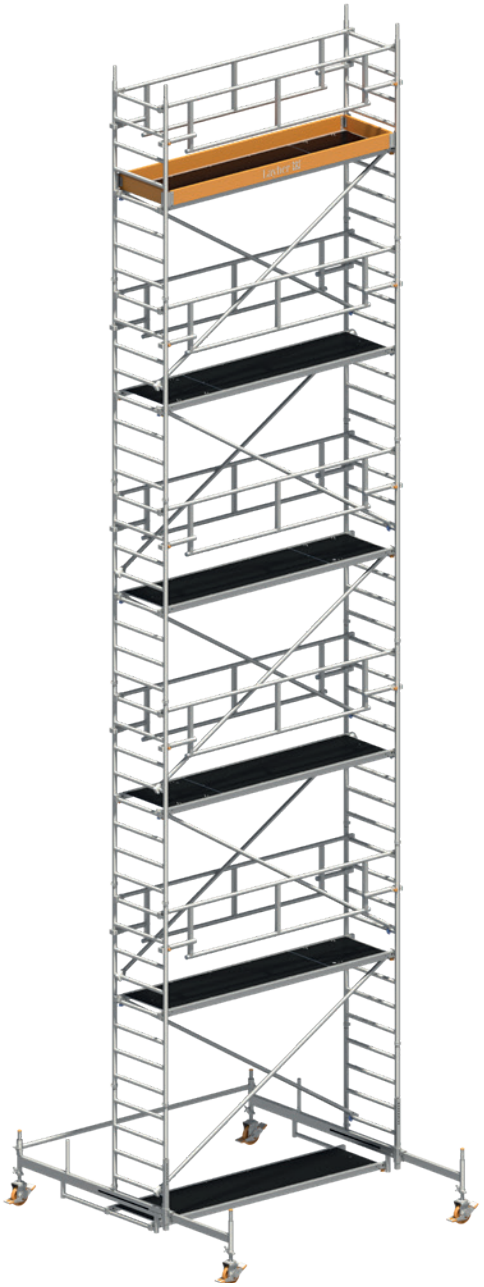
Safety Assembly P2 SAFETY[PLUS]

with double guardrail

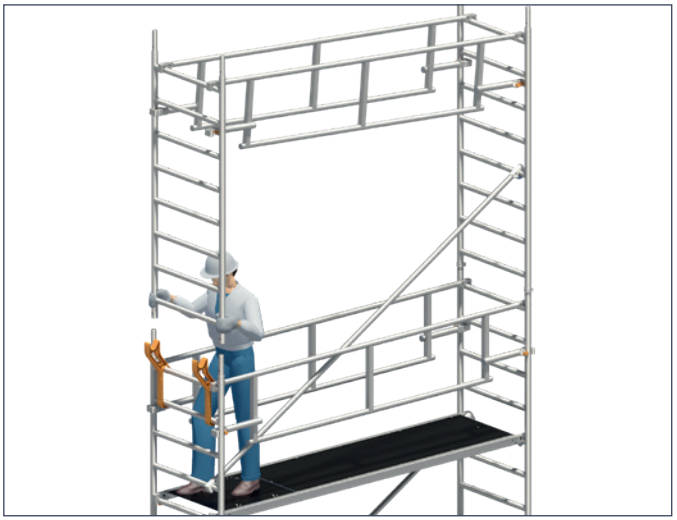
- Platforms with vertical spacing of 2 m.
- Safer design with integrated and collective advancing side protection.

Thanks to the platforms, which are assembled 2 m apart, the required side protection can be assembled and dismantled only and unavoidably from the already secured level below it, so that there is already a double side protection in place on all sides when both accessing and leaving the next-up platform.



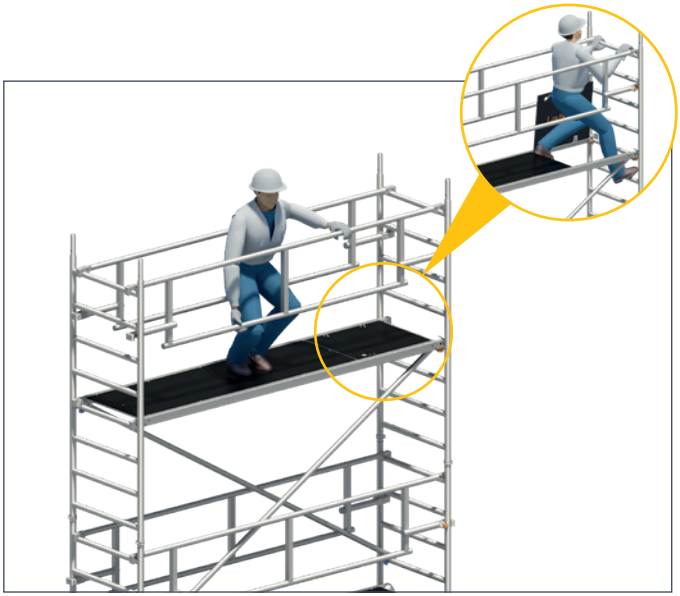


1. Attach the first ladder frame. Attach the Uni assembly hooks and position the second ladder frame in order to fit the double guardrail on both sides.



2. Swivel the ladder frame double guardrail upwards and fit it onto the lower ladder frame.

3. Insert diagonal braces and access deck.

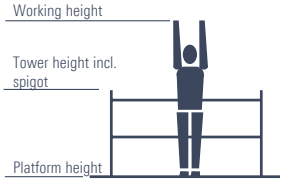


4. Access to the already secured level and final snapping into place of the double guardrail (lower snap-on claws) into the ladder frame.

3.3.2 TOWER MODELS

1421101 – 1421111

For **assembly outdoors** comply with the height restriction!




1421101

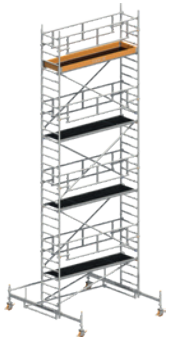

1421102

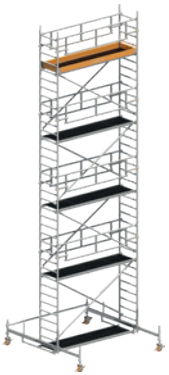

1421103

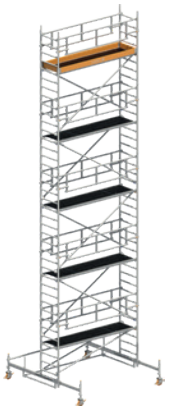

1421104

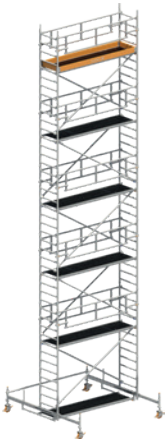

1421105

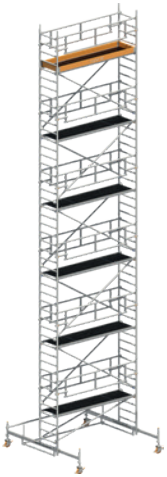

1421106


1421107


1421108


1421109


1421110


1421111

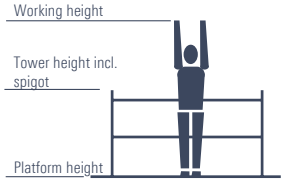
Tower model	1421101	1421102	1421103	1421104	1421105	1421106	1421107	1421108	1421109	1421110	1421111
Working height [m]	3.20	4.35	5.35	6.35	7.35	8.35	9.38	10.38	11.38	12.38	13.38
Tower height [m]	2.43	3.58	4.58	5.58	6.58	7.58	8.61	9.61	10.61	11.61	12.61
Platform height [m]	1.20	2.35	3.35	4.35	5.35	6.35	7.38	8.38	9.38	10.38	11.38
Weight [kg] (without ballast)	97.3	182.9	220.3	247.2	284.6	311.5	400.1	427.0	464.4	491.3	528.7
Ballasting (stated in units)											
Indoors											
Assembly in the centre*	l2 r2	0	0	0	0	0	0	0	0	0	0
Assembly off-centre	X	0	0	L0 R4	L0 R4	L0 R6	L0 R4	L0 R6	L0 R6	L0 R8	L0 R10
Assembly off-centre with wall bracing	X	0	0	0	0	0	0	0	0	0	0
Assembly in the centre with 1 bracket*	X	0	0	L0 R2	L0 R4	L0 R6	0	0	0	0	0
Assembly in the centre with 2 brackets*	X	0	0	0	0	0	0	0	0	0	0
Outdoors											
Assembly in the centre*	l2 r2	l1 r1	l5 r5	l9 r9	l15 r15	l21 r21	X	X	X	X	X
Assembly off-centre	X	L0 R6	L0 R10	L4 R16	L10 R22	L14 R28	X	X	X	X	X
Assembly off-centre with wall bracing	X	0	0	L4 R0	L10 R0	L14 R0	X	X	X	X	X
Assembly in the centre with 1 bracket*	X	L0 R8	L2 R12	L6 R16	L12 R22	L20 R30	X	X	X	X	X
Assembly in the centre with 2 brackets*	X	l5 r5	l8 r8	X	X	X	X	X	X	X	X

* For assembly with adjustable mobile beam, the latter must be fully extended. X = not permissible / not possible 0 = no ballast required For ballasting, use Layher ballast weights, Ref. No. 1249.000, of 10 kg each.
Fasten the weights quickly and securely at the right place using the coupler handwheel. All heights stated without possible spindle extension! The max. spindle extension of the relevant assembly variants can be found in the corresponding section! **Do not use any liquid or granular ballast substances. The ballast weights must be distributed evenly to all ballasting fixing points.**
Example: l2, r2 → Fasten 2 ballast weights of 10 kg each to the ladder frame on its left-hand side, and 2 ballast weights of 10 kg each on its right-hand side.
L6, R16 → Fasten 6 ballast weights of 10 kg each to the mobile beam on its left-hand side, and 16 ballast weights of 10 kg each on its right-hand side
r and R relate in the case of off-centre assembly always to the side facing away from the tower; l and L relate to the side facing the tower.

1421122 – 1421131

with double guardrail and stabilisers, extendable

For **assembly outdoors** comply with the height restriction!



1421122 1421123 1421124

1421125 1421126 1421127 1421128 1421129 1421130 1421131

Tower model	1421122	1421123	1421124	1421125	1421126	1421127	1421128	1421129	1421130	1421131
Working height [m]	4.20	5.20	6.20	7.20	8.20	9.20	10.20	11.20	12.20	13.20
Tower height [m]	3.43	4.43	5.43	6.43	7.43	8.43	9.43	10.43	11.43	12.43
Platform height [m]	2.20	3.20	4.20	5.20	6.20	7.20	8.20	9.20	10.20	11.20
Weight [kg] (without ballast)	171.8	225.6	236.1	289.9	300.4	354.2	364.7	418.5	429.0	482.8
Ballasting (stated in units)										
Indoors										
Assembly in the centre	0	0	0	0	0	0	0	0	0	0
Assembly off-centre	L0 R2	L0 R4	L0 R6	L0 R8	L0 12R	L0 R12	L0 R16	L0 R18	L0 R20	L0 R22
Assembly off-centre with wall bracing	0	0	0	0	0	0	0	0	0	0
Outdoors										
Assembly in the centre	0	0	0	0	0	X	X	X	X	X
Assembly off-centre	L0 R10	L0 R16	L0 R20	L0 R28	L0 R34	X	X	X	X	X
Assembly off-centre with wall bracing	0	0	0	0	0	X	X	X	X	X

X = not permissible / not possible 0 = no ballast required For ballasting, use Layher ballast weights, Ref. No. 1249.000, of 10 kg each. Fasten the weights quickly and securely at the right place using the coupler handwheel. All heights stated without possible spindle extension! The max. spindle extension of the relevant assembly variants can be found in the corresponding section! **Do not use any liquid or granular ballast substances. The ballast weights must be distributed evenly to all ballasting fixing points.**

Example: l2, r2 → Fasten 2 ballast weights of 10 kg each to the ladder frame on its left-hand side, and 2 ballast weights of 10 kg each on its right-hand side.
L6, R16 → Fasten 6 ballast weights of 10 kg each to the mobile beam on its left-hand side, and 16 ballast weights of 10 kg each on its right-hand side
r and R relate in the case of off-centre assembly always to the side facing away from the tower; l and L relate to the side facing the tower.

3.3.3 PARTS LIST

Safety Assembly P2 SAFETY[PLUS] with double guardrail, Tower models 1421101 – 1421111

Tower model	Ref. No.	1421101	1421102	1421103	1421104	1421105	1421106	1421107	1421108	1421109	1421110	1421111
Guardrail 2.85 m	1205.285	0	0	1	0	1	0	1	0	1	0	1
Diagonal brace 2.85 m	1208.285	0	2	2	4	4	6	6	8	8	10	10
Diagonal brace 2.95 m	1208.295	0	0	2	0	2	0	2	0	2	0	2
Basic tube 2.85 m	1211.285	0	1	1	1	1	1	1	1	1	1	1
Double safety guardrail	1216.285	2	2	4	4	6	6	8	8	10	10	12
Deck 2.85 m	1241.285	0	1	0	1	0	1	0	1	0	1	0
Access deck 2.85 m	1242.285	1	1	2	2	3	3	4	4	5	5	6
Spring clip	1250.000	0	8	8	12	12	16	16	20	20	24	24
Ladder frame 75/4 - 1.00 m	1297.004	0	2	0	2	0	2	0	2	0	2	0
Ladder frame 75/8 - 2.00 m	1297.008	2	2	4	4	6	6	8	8	10	10	12
Uni assembly hook	1300.010	0	1	1	1	1	1	1	1	1	1	1
Mobile beam with access ledger	1323.180	0	2	2	2	2	2	0	0	0	0	0
Mobile beam with access ledger, adjustable	1323.320	0	0	0	0	0	0	2	2	2	2	2
Wheel 700	1359.200	4	4	4	4	4	4	4	4	4	4	4
End toe board	1438.075	2	2	2	2	2	2	2	2	2	2	2
Toe board with claw	1439.285	2	2	2	2	2	2	2	2	2	2	2
Ballast	1249.000	Number of ballast weights, see Section 3.3.2: Tower models										

Safety Assembly P2 SAFETY[PLUS] with double guardrail with stabiliser, extendable Tower models 1421122 – 1421131

Tower model	Ref. No.	1421122	1421123	1421124	1421125	1421126	1421127	1421128	1421129	1421130	1421131
Guardrail 2.85 m	1205.285	2	2	2	2	2	2	2	2	2	2
Diagonal brace 2.85 m	1208.285	2	2	4	4	6	6	8	8	10	10
Diagonal brace 2.95 m	1208.295	0	2	0	2	0	2	0	2	0	2
Double safety guardrail	1216.285	2	4	4	6	6	8	8	10	10	12
Access deck 2.85 m	1242.285	1	2	2	3	3	4	4	5	5	6
Stabiliser, extendable	1248.260	4	4	4	4	4	4	4	4	4	4
Rotation lock for stabiliser	1248.261	4	4	4	4	4	4	4	4	4	4
Spring clip	1250.000	4	4	8	8	12	12	16	16	20	20
Ladder frame 75/4 - 1.00 m	1297.004	2	0	2	0	2	0	2	0	2	0
Ladder frame 75/8 - 2.00 m	1297.008	2	4	4	6	6	8	8	10	10	12
Uni assembly hook	1300.010	1	1	1	1	1	1	1	1	1	1
Access ledger	1344.002	1	1	1	1	1	1	1	1	1	1
Wheel 700	1359.200	4	4	4	4	4	4	4	4	4	4
End toe board	1438.075	2	2	2	2	2	2	2	2	2	2
Toe board with claw	1439.285	2	2	2	2	2	2	2	2	2	2
Ballast	1249.000	Number of ballast weights, see Section 3.3.2: Tower models									

Extra requirements for assembly with bracket deck surfaces

Tower model	Ref. No.	1 bracket deck surface	2 bracket deck surfaces
Uni Telescoping Guardrail	1204.180	2	2
Guardrail 2.85 m	1205.285	4	4
Deck 2.85 m	1241.285	1	2
Spring clip	1250.000	4	8
Ladder frame 75 / 4	1297.004	2	4
Intermediate deck	1339.285	1	2
Aluminium bracket 0.75 m	1341.075	2	4
End toe board 0.75 m	1438.075	2	4

The tower models, that may be widened using **bracket deck surfaces**, can be found on pages 40 – 41 (ballasting). When using brackets, the tower may only be loaded with 1.5 kN / m² (load class 2) at one working level only. A maximum of two bracket deck surfaces may be attached. When bracket deck surfaces are fitted, the spindles must not be extended. The respective working level must be equipped with complete side protection.

3.3.4 ASSEMBLY SEQUENCE SAFETY ASSEMBLY P2 SAFETY^{PLUS} WITH DOUBLE GUARDRAIL

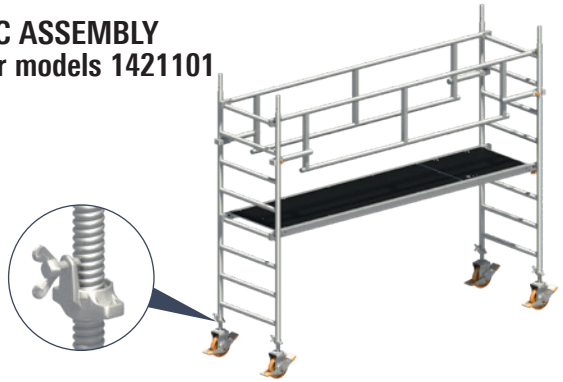
Observe the general directions for assembly and use on pages 5 – 7. The assembly examples shown are intended for use up to a maximum platform height of 12 m indoors and up to a maximum platform height of 8 m outdoors. The snap-on claws of the parts should generally speaking snap in completely. Level the scaffolding structure after basic assembly. This is done using the threaded spindles of the wheels.

The wheels must be locked during assembly, modification or dismantling and while there is anybody on the tower.

Hammer home the wedges in the system until the blow bounces off. Always tighten the screw couplers well (50 Nm).

The **item numbers** for the components relate to the component list on pages 63 – 37.

BASIC ASSEMBLY
Tower models 1421101



1. Insert the wheels **1** into the ladder frames 75/8 **15** and secure them against falling out by tightening the wing screws on the spindle nuts.

2. Position a ladder frame 75/8 **15**, hook two double safety guardrails **19** with snap-on housings over the top rung of the upper guardrail and connect it to a second ladder frame 75/8 **15**, which was previously positioned at an outward angle on the opposite side, also at the top rung.

   It must be ensured here that the claws each contact the inside of the shift preventer on the rung (bulge on the top of the rung) to allow the lower claws to swivel freely.

   Then position the second ladder frame 75/8 **15** parallel to the first ladder frame by swinging it at the bottom, allowing the lower claw of the guardrails to snap in at the upright tubes.

3. Hook the access deck **27** into the fourth rung from the bottom of the ladder frames 75/8 **15**.

Further assembly is performed as per page 48, “Assembly of intermediate platforms”.

BASIC ASSEMBLY
Tower models 1421102, 1421104, 1421106, 1421108 and 1421110

1. Insert the wheels **1** into the mobile beams **6 / 7** and secure them against falling out by tightening the wing screws on the spindle nuts.

2. Connect the mobile beams **6 / 7** to a basic tube **9** – or optionally to a basic strut **10** – and a deck **28**.

3. Fit two ladder frames 75/4 **14** onto the mobile beams and secure them using spring clips **16**.

Further assembly is performed as per page 48, “Assembly of intermediate platforms”.

BASIC ASSEMBLY
Tower models 1421103, 1421105, 1421107, 1421109 and 1421111

1. Insert the wheels **1** into the mobile beams **6/7** and secure them against falling out by tightening the wing screws on the spindle nuts.

2. Connect the mobile beams **6/7** to one another with a basic tube **9** – or optionally with a basic strut **10** – and a guardrail 17 on the access ledger of the mobile beam.

3. Fit a ladder frame 75/8 **15** onto the mobile beam **6/7** and secure it using spring clips **16**. Hook two double safety guardrails **19** with snap-on housings over the top rung of the upper guardrail and connect them to a second ladder frame 75/8 **15**, which was previously positioned at an outward angle on the opposite side, also at the top rung.

   It must be ensured here that the claws each contact the inside of the shift preventer on the rung (bulge on the top of the rung) to allow the lower claws to swivel freely.

   Then swivel the second ladder frame 75/8 **15** upwards and fit it into the spigots of the mobile beam **6/7**.

4. Fit two diagonal braces **23** and the access deck **27**. **Ensure that the two diagonal braces are installed parallel to one another in the direction of the access hatch.**

5. Climb up to and onto the next-up platform, which has already been fully secured with two-part side protection. Fix the double safety guardrail **19** by lightly pressing it outwards in order to snap the lower claws in the upright tube of the ladder frame.

Further assembly is performed as per page 48, “Assembly of intermediate platforms”.

BASIC ASSEMBLY
Tower models 1421122, 1421124, 1421126, 1421128 and 1421130

1. Insert the wheels **1** into the ladder frames 75/4 **14** and secure them against falling out by tightening the wing screws on the spindle nuts.

2. Fit a ladder frame 75/8 **15** onto a ladder frame 75/4 **14** and secure it using spring clips **16**. Hook two double safety guardrails **19** with snap-on housings over the top rung of the upper guardrail and connect them to a second ladder frame 75/8 **15**, which was previously positioned at an outward angle on the opposite side, also at the top rung.

It must be ensured here that the claws each contact the inside of the shift preventer on the rung (bulge on the top of the rung) to allow the lower claws to swivel freely.

Then swivel the second ladder frame 75/8 **15** upwards and fit it into spigots of the ladder frame 75/4 **14**, and secure it using spring clips **16**.

3. Fit two diagonal braces **22** crosswise. Fit two guardrails **17** to the bottom rung of the ladder frame 75/4 **14** and then hook in an access deck **27**.

4. To maintain the maximum distance from the first rung, fit an access ledger **11** on the ascent side of the rolling tower.

5. Climb up to and onto the next-up platform, which has already been fully secured with two-part side protection. Fix the double safety guardrail **19** by lightly pressing it outwards in order to snap the lower claws in the upright tube of the ladder frame.

Further assembly is performed as per page 48, “Assembly of intermediate platforms”.
Further assembly for model 1421122 is performed as per page 49 “Completing the working platform”.

BASIC ASSEMBLY
Tower models 1421123, 1421125, 1421127, 1421129 and 1421131

1. Insert the wheels **1** into the ladder frames 75/8 **15** and secure them against falling out by tightening the wing screws on the spindle nuts.

2. Position a ladder frame 75/8 **15**, hook two double safety guardrails **19** with snap-on housings over the top rung of the upper guardrail and connect it to a second ladder frame 75/8 **15**, which was previously positioned at an outward angle on the opposite side, also at the top rung.

It must be ensured here that the claws each contact the inside of the shift preventer on the rung (bulge on the top of the rung) to allow the lower claws to swivel freely.

Then position the second ladder frame 75/8 **15** parallel to the first ladder frame by swinging it at the bottom, allowing the lower claw of the guardrails to snap in at the upright tubes.

3. Hook the access deck **27** into the fourth rung from the bottom of the ladder frames 75/8 **15**. Fit two diagonal braces **23** in the same direction. **Ensure that the two diagonal braces are installed parallel to one another in the direction of the access hatch.** Fit two guardrails **17** to the bottom rung of the ladder frame 75/8 **15** and then hook in an access deck **27**.

4. To maintain the maximum distance from the first rung, fit an access ledger **11** on the ascent side of the rolling tower.

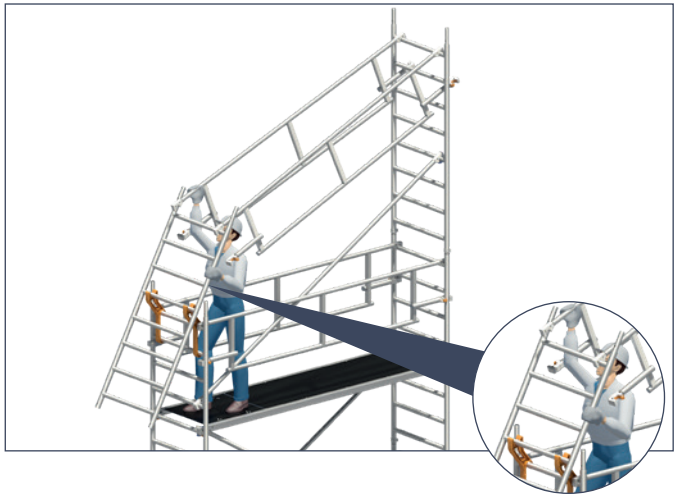
5. Climb up to and onto the next-up platform, which has already been fully secured with two-part side protection. Fix the double safety guardrail **19** by lightly pressing it outwards in order to snap the lower claws in the upright tube of the ladder frame.

Further assembly is performed as per page 48, “Assembly of intermediate platforms”.

ASSEMBLY OF INTERMEDIATE PLATFORMS
All scaffolding models with Safety Assembly P2 SAFETY[PLUS] with double guardrail

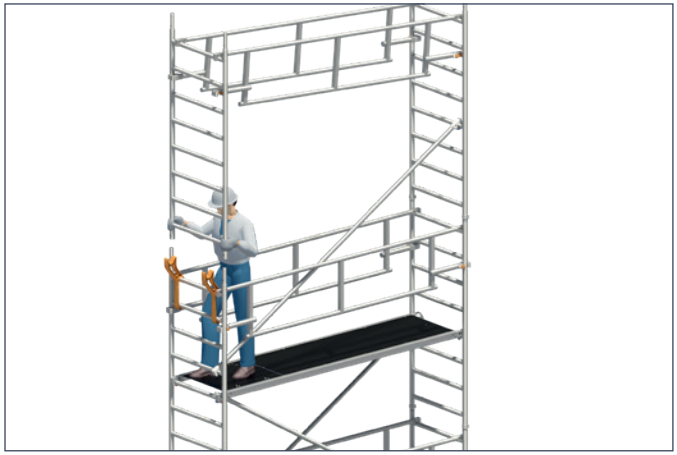
Repeat the following assembly steps 1 to 5 several times depending on the assembly height.

1. Fit the first ladder frame 75/8 **15** and secure it using spring clips **16**.

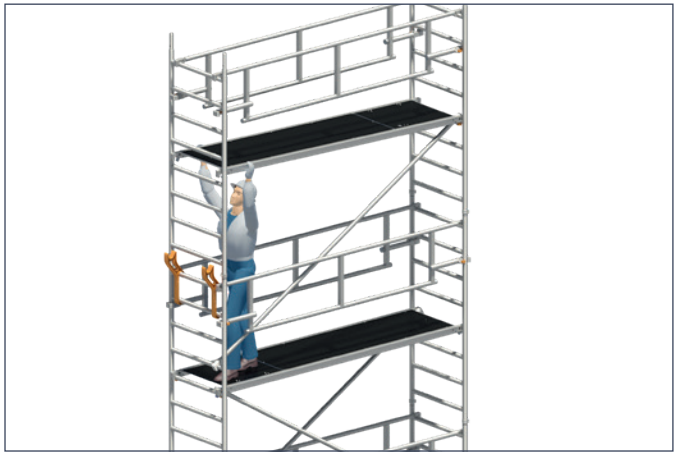


2. Attach the Uni assembly hooks **29** and position the second ladder frame 75/8 **15**. Fit a diagonal brace **22** rising from the ladder frame 75/8 **18** on the side of the Uni assembly hooks **29** to the already fitted ladder frame 75/8 **15**. Hook two safety double guardrails **19** with the snap-on housings at the top handrail in the top rung of the fitted ladder frame 75/8 **15** and connect them to the second ladder frame 75/8 **15**, which was previously positioned in the Uni assembly hook **29**, again at the top rung.

It must be ensured here that the claws each contact the inside of the shift preventer on the rung (bulge on the top of the rung) to allow the lower claws to swivel freely.

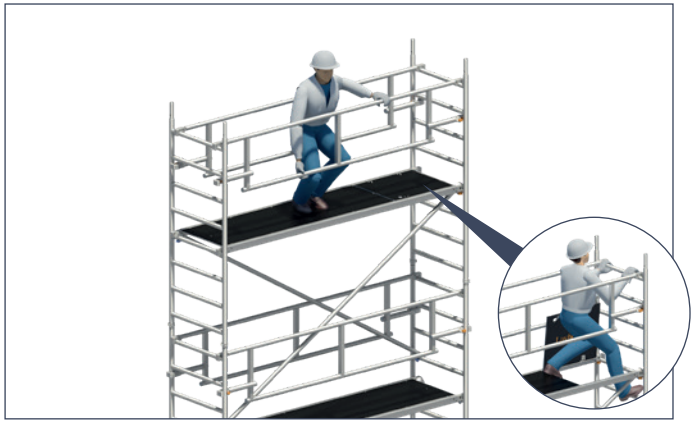


3. Swivel the ladder frame 75/8 **15** upwards out of its position into the Uni assembly hook **29**, fit it in place and secure it with spring clips **16**.



4. Insert the second diagonal brace **22** and the access deck **27**.

*It should be ensured that the diagonal braces **22** each cross over inside the bay and additionally have a tower-like (zig-zag) form on both sides.*



5. Climb up to and onto the next-up platform, which has already been fully secured with two-part side protection. Fix the double safety guardrail **19** by lightly pressing it outwards in order to snap the lower claws in the upright tube of the ladder frame.

COMPLETING THE WORKING PLATFORM
All tower models for construction of the respective working platform

To complete the working platform, attach toe boards with claw **32** and end toe boards **33**.

If an intermediate platform is used for working, attach toe boards here too.

3.3.5 DISMANTLING SEQUENCE SAFETY ASSEMBLY P2 SAFETY^{PLUS} WITH DOUBLE GUARDRAIL

Repeat the following dismantling steps 1 to 6 several times depending on the assembly height.

Dismantling is performed in the reverse order to assembly.

When dismantling, do not remove the bracing elements such as diagonal braces, guardrails or access decks until the ladder frames above them have been dismantled.

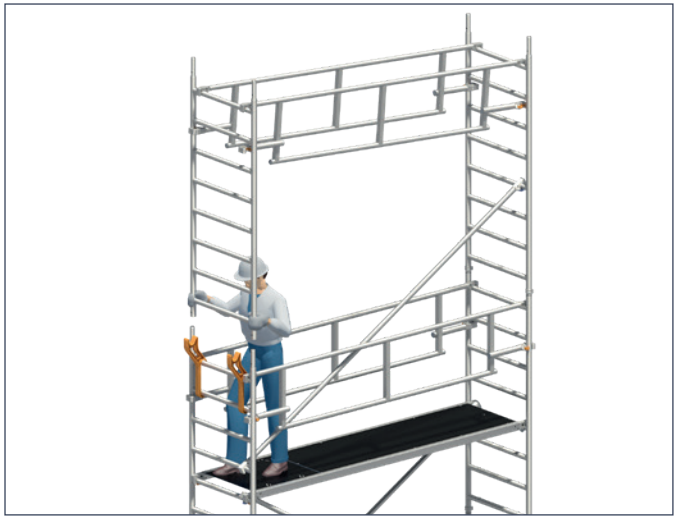
To lift out the individual parts, open the snap-on claws by pressing their locking clips.

1. Dismantle the toe boards **32/33** (only necessary on the working platform).

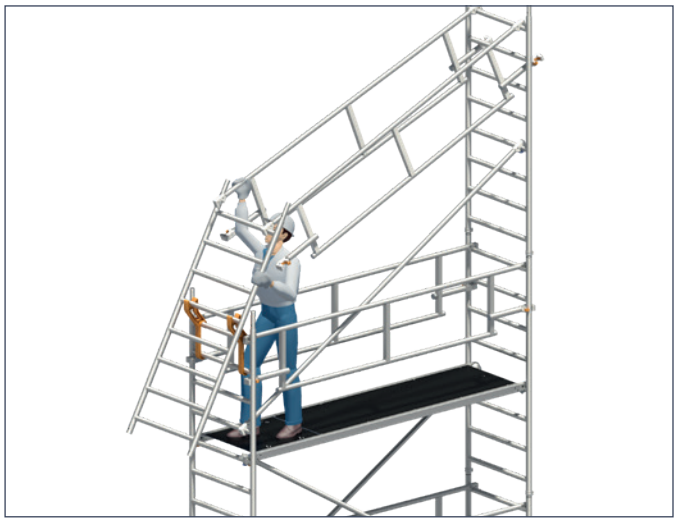
2. Ensure before climbing down that the double safety guardrails **17** are unlocked by releasing the lower claws at the upright tube of the ladder frame 75/8 **15**. This is simplified by lifting them slightly during unlocking. After releasing the double safety guardrails **17**, they are again brought into contact by the upper claws with the inside of the shift preventer on the rung (bulge on the top of the rung) to allow the lower claws to swivel freely.

3. After climbing down to the platform underneath, attach the Uni assembly hooks **29**; the spring clips **16** above them can then be removed.

4. Dismantle the access deck **27** and the diagonal brace **22** which rises upwards in the direction of the previously fitted assembly hooks **27**.



5. Lift out the ladder frame 75/8 **15** on the side of the Uni assembly hooks, swivel it downwards together with the two double safety guardrails **17** and position it in the assembly hooks **27**.



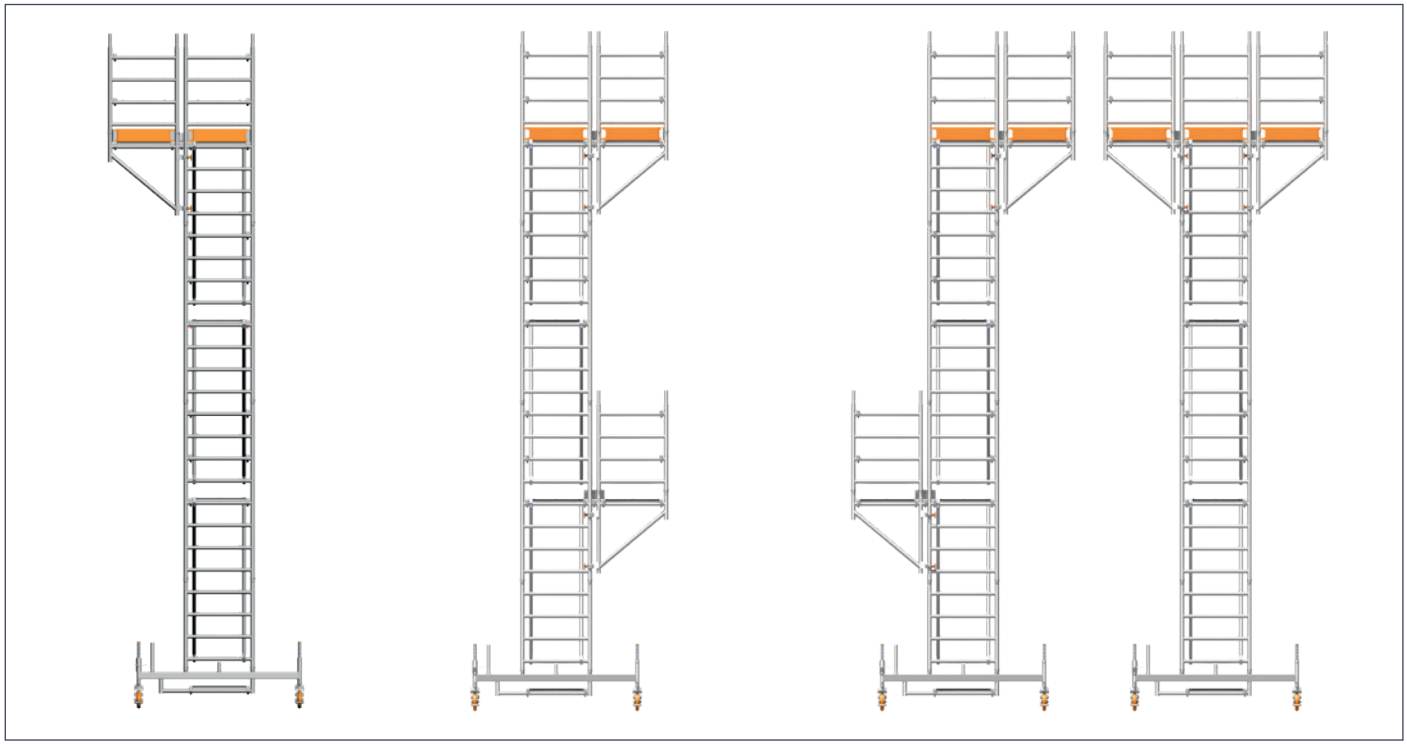
6. Detach both double safety guardrails **17** from the ladder frame 75/8 **15** positioned in the Uni assembly hooks **29**, and set them down suspended on one side from the opposite ladder frame 75/8 **15**. Secure the ladder frames positioned in the assembly hooks **27** from falling out or tipping over and then detach the double safety guardrails **17** from the suspended position. Remove the second diagonal brace **22** so that the still-fitted ladder frame 75/8 **15** can be removed.

3.3.6 ASSEMBLY WITH BRACKETS

Please refer to the table on page 40 to see which tower models are allowed to be extended with brackets.

When brackets are used, the following points must be noted in addition:

- The tower may be loaded with 1.5 kN / m2 (load class 2) at one working level only.
- To ensure stability, do not extend the spindles when assembling with brackets.
- To provide the required two-part side protection during Safety Assembly P2 SAFETY[PLUS] with double guardrail, four guardrails **17** plus two Uni Telescoping Guardrails **20** are required **in addition** (see item **7.** and Parts list, page 43).
- The respective working platform must be equipped with complete side protection.
- The ladder frames must be assembled in the centre position.
- The corresponding ballast weights (see ballasting tables on pages 40–41) must be attached before fitting the brackets.
- A maximum of two bracket deck surfaces can be fitted to a tower. The bracket deck surfaces can be used either singly on one side, both on one side or one on each side.
- The bracket deck surfaces can be fitted at any level of the tower where a deck is provided.



If the ballasting table is not complied with, there is an increased risk of accidents as a result of the tower tipping because of uneven loading.

Assembly

It is essential that in the case of assembly with brackets the level in which the bracket is fitted is assembled according to the sequence of Safety Assembly P2 with Uni Telescoping Guardrail 20, since the double safety guardrails 19 in the Safety Assembly P2 SAFETY[PLUS] sequence can neither be removed nor fitted from the upper level for safety reasons. The assembly and dismantling sequence of Safety Assembly P2 with Uni Telescoping Guardrail is described from page 33 onwards.

1. The tower is assembled **up to one level below the height required** in accordance with the assembly sequence already described (page 43 ff.).

2. Before attaching the brackets 29, remove the toe boards 32 / 33.

3. At the level in question, bolt on two brackets 30 on each side using the couplers in such a way that the rungs of the brackets 30 are at the same height as the rungs of the ladder frames 14 / 15.

4. Now hook the decks 28 into the rungs of the bracket 30.

5. Fit the intermediate deck(s) 31 between the deck 28 in the bracket 30 and the access deck 27 in the basic structure.

6. Fit one ladder frame 75/4 14 onto each bracket 30.

7. Use two additional guardrails 17 to now construct the side protection of the first or one-side bracket deck surface. Pass the two guardrails 17 over the existing side protection of the basic structure and hook them into the ladder frames 75/4 14 of the bracket deck surface in the top and third-from-top rungs. For a bracket deck surface on both sides, remove the side protection of the basic structure on which the side protection is already provided at the bracket deck surface. Fit the guardrail 17 on the top rung, and the Uni Telescoping Guardrail 20 on the third-from-top rung over the still-existing side protection of the basic structure, in the ladder frames 75/4 14 of the bracket. The guardrail 17 and the Uni Telescoping Guardrail 20, which are after completion of the two-part side protection of the bracket deck surface(s) still present in the basic structure, can be removed and transported downwards or deposited in the rungs of the ladder frames 75/4 14 of the bracket deck surface(s).

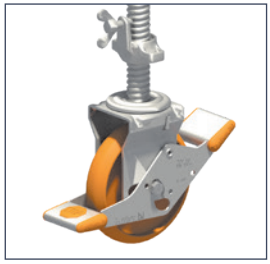
8. Complete the three-part side protection, which depends on the tower model concerned, by installing the toe boards with claw 32. Position the latter on the bracket, on the longitudinal side between the ladder frames 75/4 14, and secure them by inserting end toe boards 33 between the toe board with claw 32 and the intermediate deck 31.

Dismantling

Dismantle the bracket deck surfaces in the reverse order to assembly. After removal of the bracket deck surfaces and restoring the required two-part side protection in the basic structure, the entire tower can be dismantled as described in the dismantling sequence (see pages 50–51).

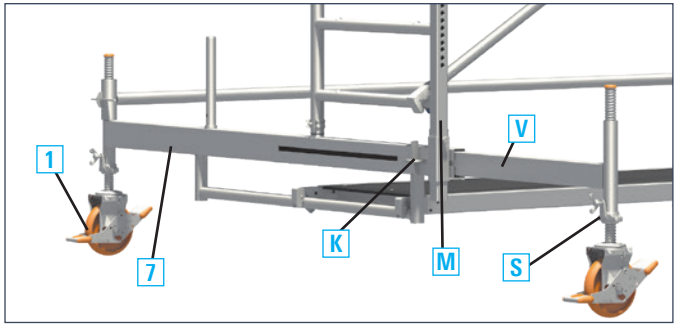
4. CASTORS AND MOBILE BEAM

OPERATING THE CASTORS



During assembly and while working, lock the castors by pressing down the brake lever labelled STOP. When the brake is locked, the lever labelled STOP must be in the down position. To move the structure, unlock the castors by pressing the opposite lever.

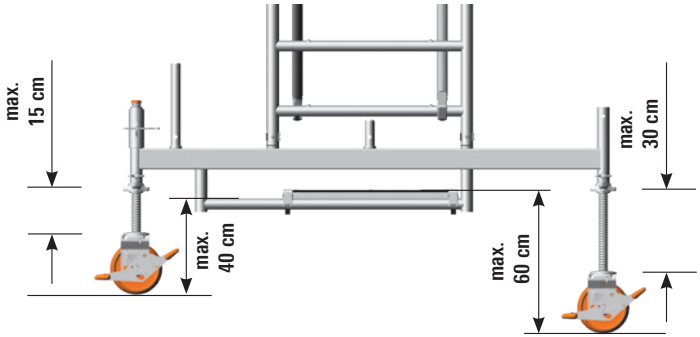
ADJUSTING THE MOBILE BEAM



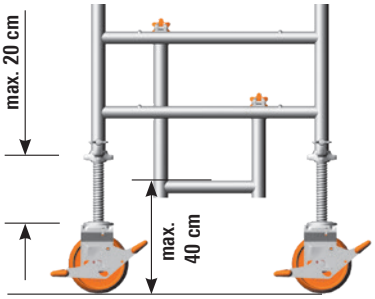
The adjustable mobile beam **7** permits working in a central position and at the wall without dismantling the tower. It can be pushed in and out in the assembled state. It must be ensured that before any movement the ballast weights specified in the ballasting table are attached at the right place (see respective section “Tower models”). For adjustment in the assembled state, lower the central support **M** attached to the mobile beam **7** as far as possible and secure it. Take the load off the wheels **1** at the sliding parts by turning the spindles **S** far enough for the adjusting part **V** to be adjusted after releasing the clamping wedge **K**. After adjustment, fix the clamping wedge **K** in place, put the load back onto the wheel **1** by extending the spindle, and then raise and secure the central support **M**.

MAXIMUM SPINDLE EXTENSION OF THE VARIOUS TOWER MODELS

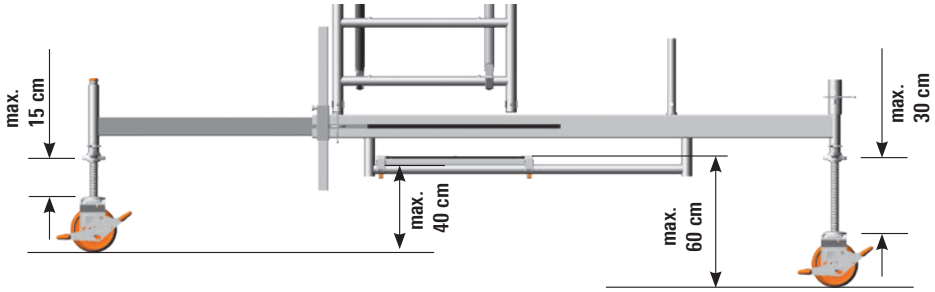
Assembly with 1323.180



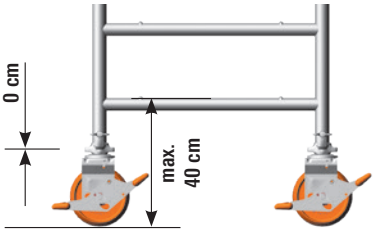
Assembly directly on wheels with access ledger



Assembly with 1323.320



Assembly directly on wheels



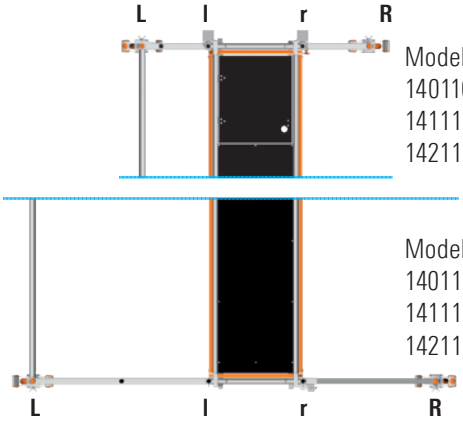
5. BALLASTING

Attachment of ballast weights

Ballasting does not depend on the assembly variant, and applies for the tower models stated in each case. The illustrations serve as examples with Safety Assembly P2.

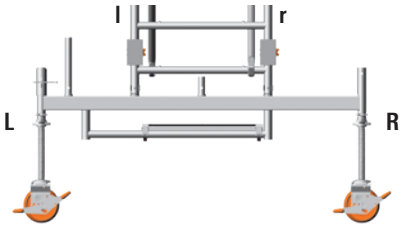
Assembly in the centre:

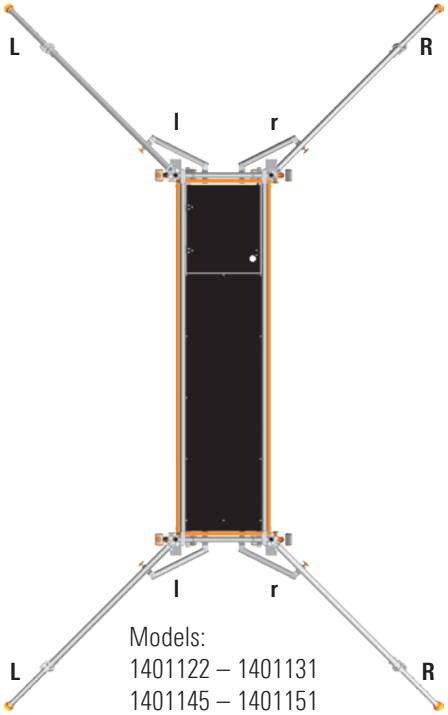
Models:
1401101
1421101



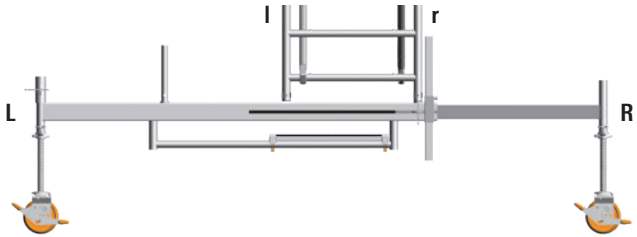
Models:
1401102 – 1401106
1411102 – 1411106
1421102 – 1421106

Models:
1401107 – 1401111
1411107 – 1411111
1421107 – 1421111



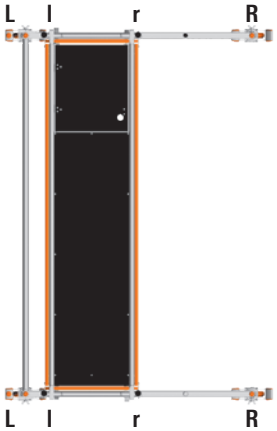


Models:
1401122 – 1401131
1401145 – 1401151
1411122 – 1411131
1421122 – 1421131

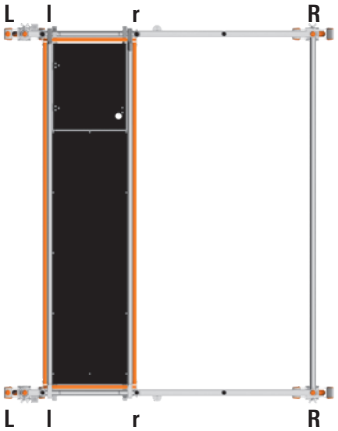


When attaching large numbers of the ballast weights required in any given case, it is possible that additional tubular components with a tube diameter of 48.3 mm may be needed as extensions at or in close proximity to the fixing points. These components (e.g. Uni distance tube, couplers, basic strut or basic tube) are not counted in the number of ballast weights in the model description or the parts lists and must be taken into account for the respective model and associated assembly site and be included as part of the assembly.

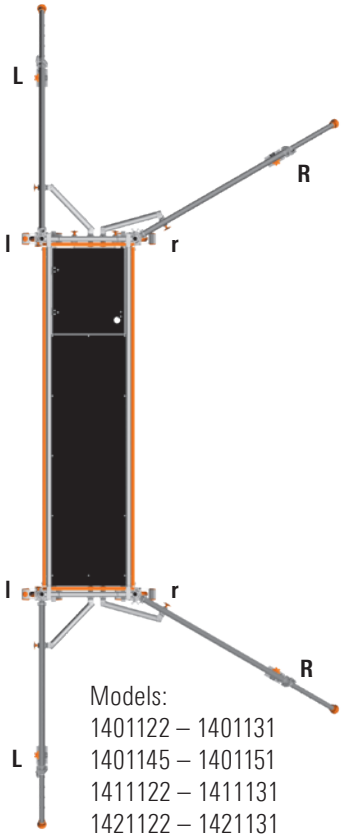
Assembly off-centre:



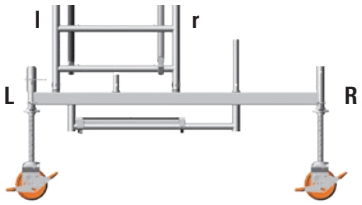
Models:
1401102 – 1401106
1411102 – 1411106
1421102 – 1421106

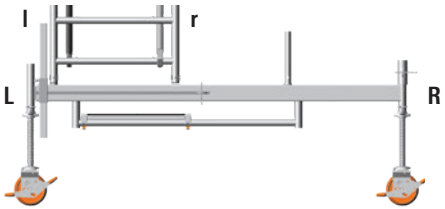


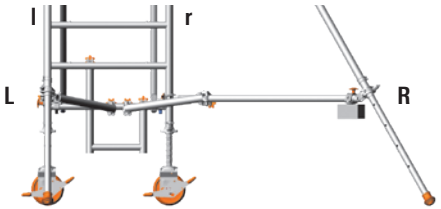
Models:
1401107 – 1401111
1411107 – 1411111
1421107 – 1421111



Models:
1401122 – 1401131
1401145 – 1401151
1411122 – 1411131
1421122 – 1421131

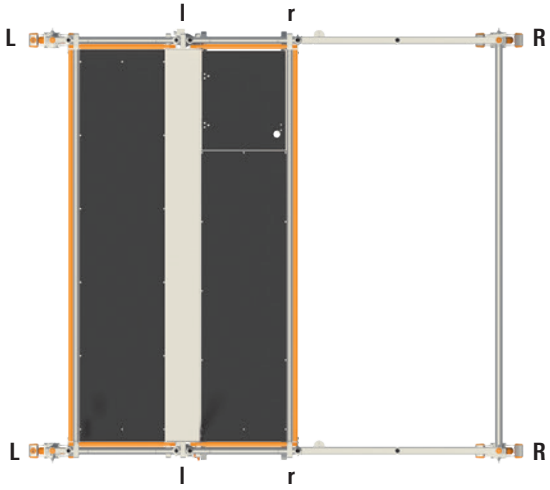


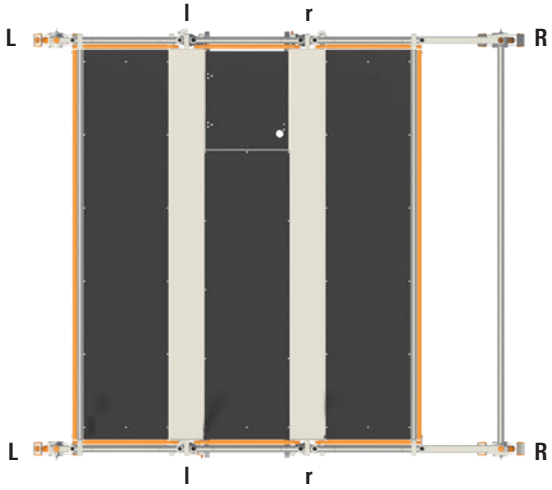


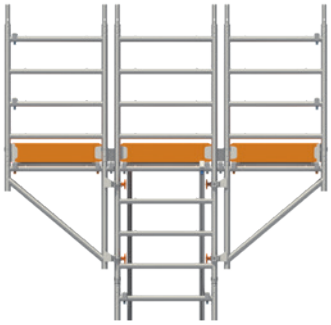


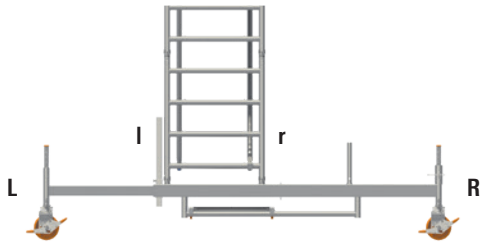
In the case of the side-mounted version with wall support, the support must always be fitted on the "L" side.

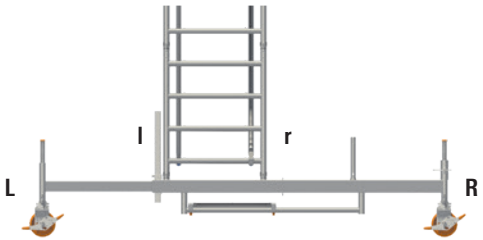
Assembly in the centre with brackets:











Example for assembly of model 1401104

Assembly outdoors in central position

Ballast: see respective section on “Tower models”

Tower model	1401104
Working height [m]	6.35
Tower height [m]	5.58
Platform height [m]	4.35
Weight [kg] (without ballast)	242.0
Ballasting	
Indoors	
Assembly in the centre	0
Assembly off-centre	L0 R4
Assembly off-centre with wall bracing	0
Assembly in the centre with 1 bracket	L0 R2
Assembly in the centre with 2 brackets	0
Outdoors	
Assembly in the centre	l5 r5
Assembly off-centre	L0 R10
Assembly off-centre with wall bracing	0
Assembly in the centre with 1 bracket	L2 R12
Assembly in the centre with 2 brackets	l8 r8

Ballasting does not depend on the assembly variant. The illustration serves as an example with Safety Assembly P2.

6. ACCESS VIA HOOK-IN LADDER

For more convenient access, the models 1401102–1401111 / 1401131 / 1401145–1401151, 1411102–1411111 / 1411122–1401131 and 1421102–1421111 / 1421122–1421131 can easily be equipped with the hook-in step ladder **37**.

Simply snap the ladder into the eighth rung of the ladder frame **14 / 15** (deck level) in the access hatch area using the snap-on claws, and rest it on the deck below.

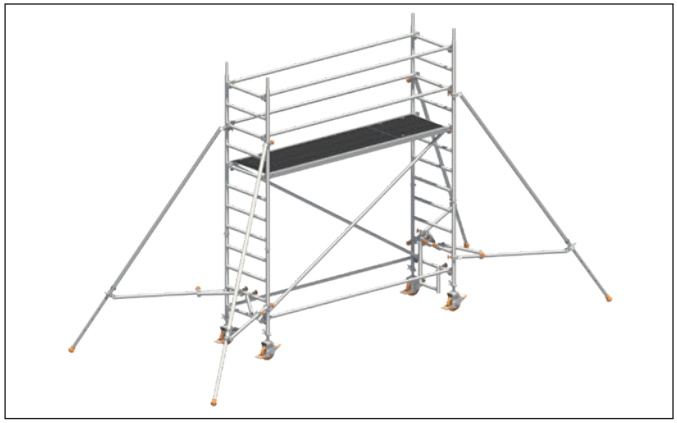
When the models are equipped with mobile beams **6 / 7**, ensure that at the level of the mobile beam the hook-in step ladder **37** is equipped with the ladder stabiliser set **38** intended for it, to maintain the correct tread angle of the steps.

The use of hook-in ladders does not depend on the assembly variant, and applies for the tower models stated above. The illustrations serve as examples with Safety Assembly P2.

7. ATTACHMENT OF STABILISERS

Before attaching the stabilisers, the basic assembly procedure for rolling tower models without mobile must be followed (see pages 17 / 32 / 46–47). Instead of mobile beams, extendable stabilisers or 5-metre stabilisers are used.

Ballasting does not depend on the assembly variant. The illustrations serve as examples with Safety Assembly P2.

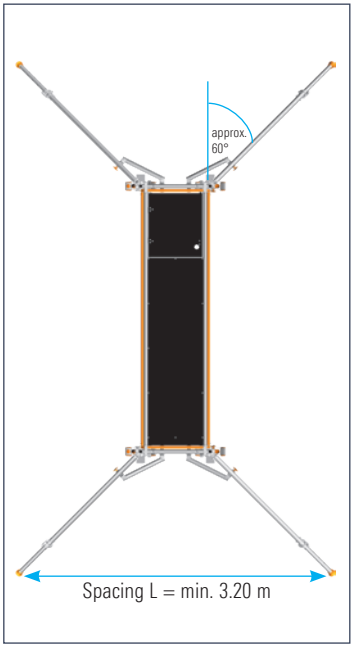


Attach a stabiliser **34/35** to each stile of the ladder frame **14/15** as follows: Position the upper half-coupler of the stabiliser **34/35** at the appropriate height on the ladder frame **14/15**. Before finally tightening the handwheels, position the transverse tube by means of the half-coupler, also at the appropriate height on the ladder frame **14/15**. After alignment of the stabilisers in the correct position (against wall or free-standing) and ensuring a firm stand on the ground, tighten the half-couplers using the handwheels. It must be ensured that the spring clips safely engage in the telescoping parts of the extendable stabiliser.

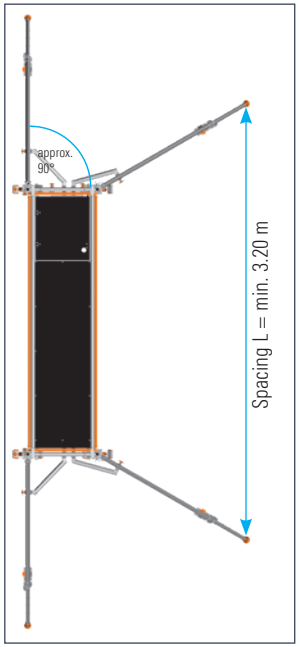
Set the alignment of the stabilisers as follows:
Free-standing assembly:
in each case about 60° to the tower longitudinal side (Fig. left).
Assembly against a wall
On the wall side about 90° to the tower end face
Side facing away from the wall about 60° to the tower longitudinal side (Fig. right).

The specified angles can be checked after attachment of the stabilisers **34/35** on the basis of the length dimensions "Spacing L". To ensure that the position of the stabilisers cannot change, for example due to inadvertent rotation, attach the tower rotation lock **36** to the stabiliser **33 / 34** . Position the tower rotation lock **36** between the ladder frame **14/15** and the stabiliser **33 / 34** such that one half-coupler is fastened to the transverse tube of the stabiliser and the second half-coupler to the ladder frame rung. After positioning, tighten the half-couplers using the handwheels. When moving the Mobile Working Platform, do not lift the stabiliser **34/35** more than 2 cm off the ground. Correct ballasting of the individual models is specified in the table for ballasting (see respective section “Tower models”). For work performed on a load-bearing wall, wall bracing can be fitted on both sides of the tower, allowing a reduction of the ballasting in accordance with the figures in the ballasting table (see appropriate section “Tower models”).

Free-standing assembly



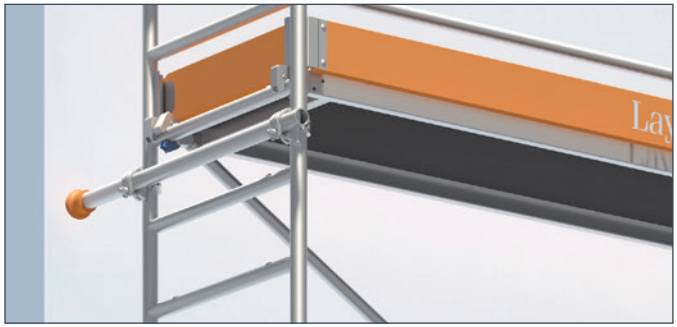
Assembly against a wall



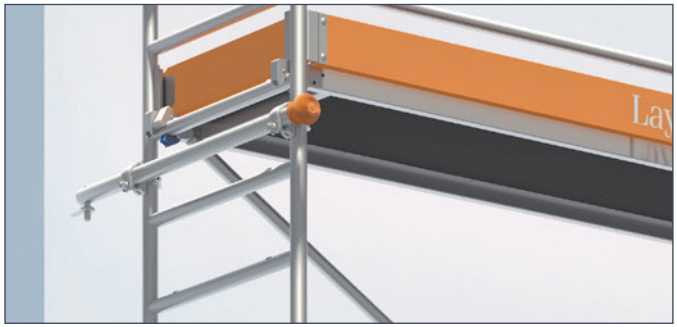
8. WALL BRACING (under compression) ANCHORING (under compression and tension)

For work performed on a load-bearing wall, reduce the ballasting in accordance with the **Ballasting** table (see respective section "Tower models"). In this case, wall supports or anchoring must be installed on both sides of the tower. Use the Uni distance tube **25** and fasten it to the ladder frame **14 / 15** using two couplers **26** in each case. Position the rubber mount on the wall (see detail A) to provide bracing. The Uni distance tube **25**, rotated by 180°, is used for anchoring and is fitted in an eyebolt which was attached to the wall previously (see detail B). Install the mobile beams such that they project from the side facing away from the wall. Attach the wall supports / anchoring at the height of the top working platform or at most 1 m below that.

Wall bracing / anchoring does not depend on the assembly variant. The illustrations serve as examples with Safety Assembly P2.



Detail A



Detail B

9. COMPONENTS OF THE SYSTEM

1

1359.200 Wheel 700
Plastic wheel, D=200 mm. With base plate, adjustment range 0.30 – 0.60 m, spindle nut with lock, wheel with twin brake lever and load centring when braked, permissible load capacity: 7.0 kN (≈ 700 kg)

Functioning predecessor article 1259.200 / 1259.201 (not shown) can remain in use.

2

1358.200 Wheel 700 with polyurethane tyre
Plastic wheel, D=200 mm. With base plate, adjustment range 0.30 – 0.60 m, spindle nut with lock, wheel with twin brake lever and load centring when braked, permissible load capacity: 7.0 kN (≈ 700 kg)

Functioning predecessor article 1268.200 / 1259.201 (not shown) can remain in use.

3

1260.201 Wheel 1000
Plastic wheel, D=200 mm, made of polyamide. With base plate, adjustment range 0.30 – 0.60 m, spindle nut with lock, wheel with twin brake lever and load centring when braked, permissible load capacity: 10 kN (≈ 1000 kg)

Functioning predecessor article 1260.200 (not shown) can remain in use.

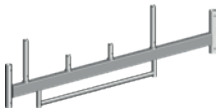
4

1260.202 Wheel 1000 with electrically conductive polyurethane tyre
Plastic wheel, D= 200 mm, made of polyamide with tyre of electrically conductive polyurethane. With base plate, adjustment range 0.30 – 0.60 m, spindle nut with lock, wheel with twin brake lever and load centring when braked. Permissible load capacity 10 kN (≈ 1000 kg). Special wheel for sensitive floors, and thanks to electrical conductivity usable in explosion-proof or in ESD-risk areas, electrical leakage resistance as per DIN EN 12526 < 10^4 Ω

5

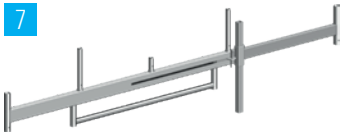
1300.150 Wheel, D=150 mm with baseplate 250
Plastic wheel, with base plate, adjustment range 0.2 – 0.35 m, spindle nut with lock, wheel with twin brake lever and load centring when braked, permissible load capacity: 7 kN (≈ 700 kg)

6



1323.180 Mobile beam with access ledger
Steel rectangular tube, hot-dip-galvanised, for base widening in towers

7



1323.320 Mobile beam with access ledger, adjustable
Steel rectangular tube, hot-dip-galvanised, system part for base widening

8

1338.320 Mobile beam with 2 spigots, adjustable
Steel rectangular tube, hot-dip-galvanised. For base widening in special rolling tower structures. System structures in conjunction with Ref. No. 1337.000

9

1211.285 Basic tube
Steel tube, hot-dip-galvanized

10

1324.285 Basic strut
with 2 half-couplers, steel tube hot-dip-galvanised

11

1344.002 Access ledger
Made of aluminium

12

1249.000 Ballast (10 kg)
Made of steel, hot-dip-galvanised with half-coupler.

13

1337.000 Spigot, adjustable
Steel, hot-dip-galvanized. For system structures in conjunction with Ref. No. 1338.320

14

1297.004 Ladder frame
Made of aluminium, rungs with non-slip grooving

1298.004 Hook-in ladder 75
Made of aluminium, rungs with non-slip grooving, spigot screwed in using four M12 x 60 bolts

15

1297.008 Ladder frame
Made of aluminium, rungs with non-slip grooving

1298.008 Hook-in ladder 75
Made of aluminium, rungs with non-slip grooving, spigot screwed in using four M12 x 60 bolts

16

1250.000 Spring clip
Steel

17

1205.285 Guardrail
Aluminium

18

1206.285 Double guardrail
Aluminium

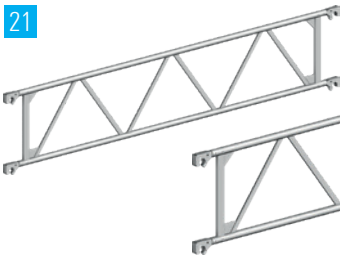
19

1216.285 Double safety guardrail
Double guardrail, 2.85 m, aluminium

20

1204.180 Uni Telescoping Guardrail
1.80 m + 2.85 m

21



1207.285 Support
Aluminium for use as support element in scaffolding construction kit or as double side protection

22

1208.285 Diagonal brace
Aluminium

23

1208.295 Diagonal brace
Aluminium

24

1347.335 Deck diagonal brace
Aluminium

25

1275.110 Uni distance tube
Aluminium tube with hook and rubber mount

26

4700.019 / 4700.022 Double coupler
Steel, galvanised

27

1242.285 Access deck
Aluminium frame, with deck and hatch of plywood with phenolic resin coating

28

1241.285 Deck
Aluminium frame, with plywood deck with phenolic resin coating

29

1300.010 Uni assembly hooks
Pair

30

1341.075 Bracket
Aluminium, for widening of the working platform on one or two sides

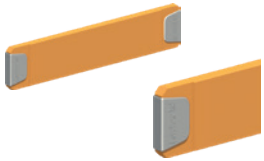
31

1339.285 Intermediate deck
Aluminium, for bracket structures

32

1439.285 Toe board with claw
Wood

33



1438.075 End toe board
Wood

34

1248.260 Stabiliser, extendable
Aluminium

35

1248.500 Stabiliser
Aluminium

36

1248.261 Rotation lock for stabiliser

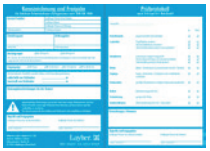
37

1314.108 Hook-in step ladder
Aluminium, 8 steps, with snap-on claw and wheels on ladder foot

38

1314.109 Ladder support set
for hook-in ladder, Ref. No. 1314.108

39



6344.400 Tower identification block
Block consisting of 50 units.

40

6344.011 See-through pocket
for Ref. No. 6344.400, 10 pcs. with integrated prohibition sign

10. CERTIFICATE

In view of updating, you can obtain the appropriate certificate on request using the contact details stated overleaf.

The currently available Certificate applies for the assembly form **3.1 Rolling Towers with Safety Assembly P2.** The assembly forms **3.2 Rolling Towers with Safety Assembly P2 with Uni Telescoping Guardrail** and **3.3 Rolling Towers with Safety Assembly P2 SAFETY**PLUS are incorporated in the certification and can be made available as soon as they have been granted.

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Wilhelm Layher GmbH & Co KG
Scaffolding Grandstands Ladders

Ochsenbacher Strasse 56
74363 Gueglingen-Eibensbach
Germany

P.O. Box 40
74361 Gueglingen-Eibensbach
Germany
Phone +49 (0)7135 70-0
Fax +49 (0)7135 70-265
E-mail info@layher.com
www.layher.com

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